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THE PACIFIC RURAL PRESS

Vol. LXXXVIII. No. 1. SAN FRANCISCO, SATURDAY, JULY 4, 1914. Forty-Fourth Year.

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THE 1914 BARLEY CROP AND LIVE STOCK.

[Written for the PACIFIC RURAL PRESS.]

The nearest that California has ever come to producing a million tons of barley in one year was in 1910, when 703,000 tons were marked up to her credit. That was 232,000 tons more than the average for the fourteen years beginning with the crop of 1900 and ending with that of 1913.

Some barley, we thought at that time, but now along comes the year of 1914, with conservative estimates of a grand total for the State of one million tons. This, with a carry-over crop of 54,000 tons, the average being 46,000 tons which is not exportable, is causing no small amount of anxiety on the part of barley growers as to how this year's record-breaking crop can be most profitably handled.

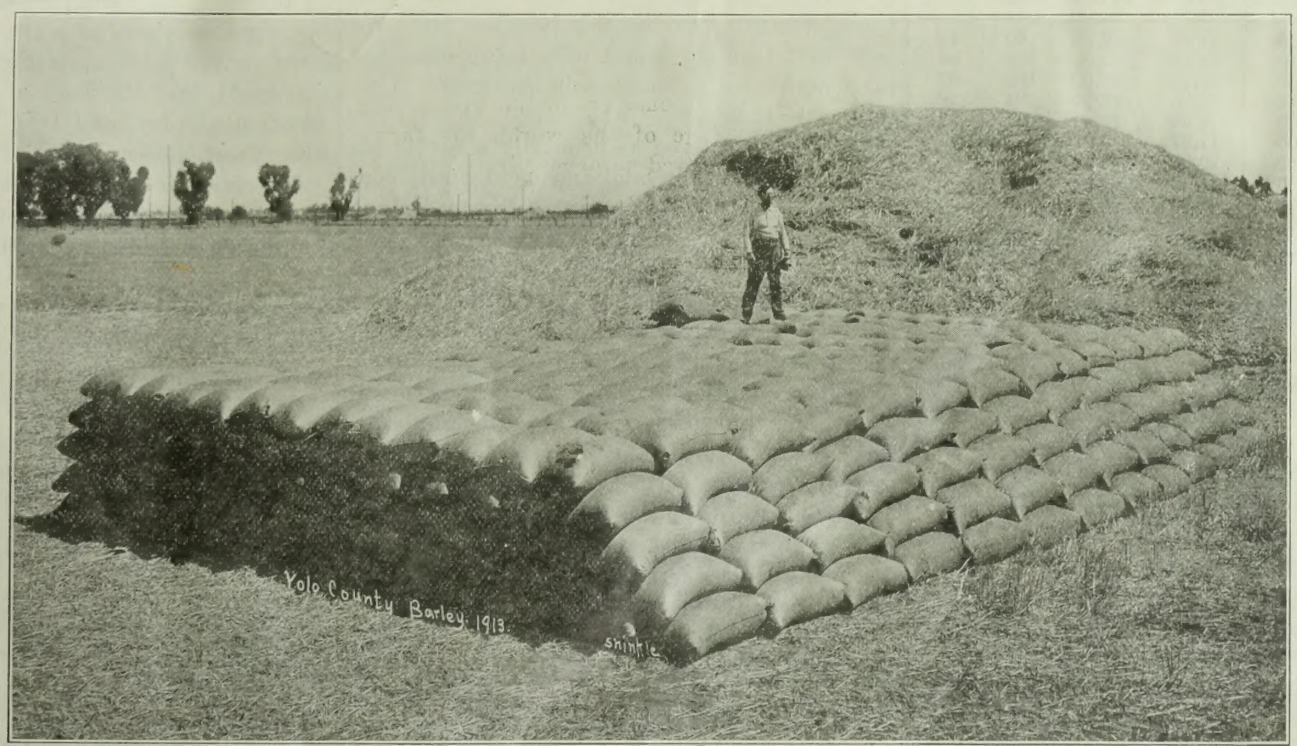
Statistics show that barley has two sources of outlet, viz: export and home consumption, and that for the 14 years beginning with the year of 1900 and ending with that of 1913 the average exports, in excess of imports, have amounted to 156,000 tons. The largest exporting done during that time was in 1910, when 338,000 tons were shipped to the United Kingdom.

This exporting has been done, in the main, with England, the grain being used for malting purposes; therefore, all quotations are based upon the Liverpool markets, and the increase or decrease of our exports depends almost entirely upon the barley crops of the world. An exception to this rule was noted in 1911, when the barley crops of the Eastern States were practically failures, which stimulated the California markets to a considerable degree, as buyers were compelled to come to this State for brewing barley. Ordinarily, however, the Eastern markets do not influence the Coast prices, as a sufficient amount of barley is grown there for brewing purposes.

Not only is the California crop abnormal this year, but the crop of the Pacific Northwest also promises to run close to one-third of a million tons, an extra large crop for that section, much of which will likely be in competition with the California crop for exporting purposes. Add to this the fact that the foreign crop now looks to be up to normal, and you have a marketing problem such as has never been experienced in the barley history of this State.

The shipping rates alone may help the situation somewhat, as the charter rates on sailing ships June 12, 1914, was 31 cents per hundred, or 10 cents lower than in 1913, for shipments from San Francisco to the United Kingdom, and there is a possibility that tolls on ships via the Panama Canal will allow a still further reduction in this rate.

In some respects we are fortunate in this year's crop, as the quality has never been surpassed, and plump heavy barley is what the exporters demand.



How California Prepares Grain for Shipment — A Barley Scene in Yolo County.

Assuming that this year's exports will equal those of 1910, which were the largest ever known and only amounted to 36½ per cent of this year's crop, we find that nearly 64 per cent of this year's crop must be either consumed at home this year or else held in storage for next year, the latter practice being an expensive one, as stored barley depreciates in value to a considerable extent and is of no value for exporting purposes.

For home consumption we have two markets, namely, for seeding next year's crop, which undoubtedly will be light in the face of the large tonnage this year, and the other as a feed for live stock.

As a feed we also find difficulties for an enlarged outlet, as the favorable winter has made it possible for farmers to grow enormous crops of wild forage as well as immense crops of grain and alfalfa hay. These big crops in connection with the general scarcity of all kinds of live stock appear to make the condition discouraging. There is, nevertheless, an opportunity for expanding our home market through the more scientific feeding of beef cattle, hogs, and dairy cattle.

Barley for Beef:—For a number of years the firm of Miller & Lux

(Continued on Page 13.)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street.

ONE DOLLAR PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS - SAN FRANCISCO, CAL.

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 30, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date	Normal to Date.	Maximum.	Minimum.
Eureka	.66	37.21	46.05	60	46
Red Bluff	1.10	34.45	25.03	104	56
Sacramento	.32	20.42	20.09	102	52
S. Francisco	.14	29 60	22 27	84	48
San Jose	.08	19.38	16.79	94	46
Fresno	.00	11.07	9 68	106	54
Independ'ce	.00	12.01	9.53	100	46
SanL.Obispo	.00	31 20	20.51	96	50
Los Angeles	.00	23.65	15.64	88	56
San Diego	.00	9.83	10 01	78	54

The Week.

One of the most notable achievements which local historians will credit to this good old summer time of 1914, will, we believe, be the drawing together of the farming interests into fuller understanding and sympathy. The menace to farming involved in the effort to enforce a universal eight-hour day will do far more for the agriculture of the State than the overwhelming negation of that effort at the November election. It will convince farmers generally of the necessity of joint action throughout their whole body not for a selfish class-purpose, but for the general welfare. Farmers as a class are intolerant of selfish purposes, and in this respect they are different from some other elements of our population which are strongly organized for selfish purposes and are trying to draw farmers into affiliation for the attainment of such purposes. One reason why efforts at farmers' organizations of great breadth have accomplished so little during the last half-century has been the fact that farmers take a broader view of class relations and never can forget the responsibilities of their individual citizenship and its relation to true patriotism. They go too far in cherishing this motive, for really there need be no conflict between class organization and the public welfare: in fact, wholesome class organization is promotive of that welfare—attained through the protection and enforcement of individual rights and the exclusion of selfish dictation and oppression. It is on the verge of this last movement that the industrial interests of the country now stand and it is apparently up to the farmers to set bounds upon it for the welfare of the whole country. They are awakening to this need, and the Farmers' Protective Leagues which are springing into existence in the great interior valley counties, where agriculture is greatest, are setting the pace for patriotic, preservative and protective organization in all the counties of the State. No one need anticipate any narrow or selfish policies to prevail in these organizations. For the reasons just suggested, farmers cannot and will not agree in support of such policies. They can never merge their independence and their broad patriotism in pursuit of measures which do not safeguard the rights of others. Time and again they have declared against special privileges for themselves and now they will proceed more forcibly to enforce the other article of their creed, viz.: that special privileges must not be given to others at their expense and injury. It is the encroachment of others which now calls them to organization. Theirs is the old slogan against oppression: "not a cent for tribute but millions for defence."

Both Business and a Mode of Life.

In comments which we have made upon the philosophy of others who have urged rural organization on the ground that farming was not a business but a mode of life, we have protested against carrying this idea too far. We hold that farming is not only a business, but the most essential business in the world. Certainly in this age of the world, the farmer cannot be considered as primarily securing his own living from the land and incidentally contributing what he can spare to the feeding of others. That idea might apply when the bulk of the population was on farms and manufacturing was also pursued on or near them. Now the farmer ministers to none of his own manufacturing needs and his business is to produce food in a quantity to which that which is consumed by his own family is insignificant. Therefore the farmer must be recognized as a man of business everywhere, except perhaps in congested European districts where he must still live upon what he can worry out of a garden-farm and where his producing capacity can but scantily meet that need. In such cases a man's relations to his fellow men are very few and simple and fortunately are now being more fairly adjusted by the help of philanthropy and the necessities of governments. We have very little of that in the United States and practically none of it in the West. Therefore our farmers' relations are wider and more important to the rest of the people and his defense of his position as a capable producer and as a director of his own industry becomes an element of patriotism and national welfare. It is recognition of this relation which is arousing our farmers to the type of protective organization which is now in progress.

But Farming Is Also a Life.

But exaltation of the commercial relations of the farmer should not obscure the fact that his mode of life is fundamental in the future prosperity of the country, not alone that the people shall be well-fed, but that they shall be well-bred and reared. Anything which drives the American farmer's family from the land will reduce the quality of American citizenship. The farmer organizes, therefore, not only in defense of his business interests as a producer, but in defense of his right to live an American life on the farm. If anyone doubts the advantage of farm life in the making of men and women, let him listen to the enthusiasm with which successful city people boast of their youthful share in it and their efforts to secure some of it for their own children. It is not a matter requiring argument, and rural life has supporters and defenders throughout our whole population who will act with farmers who organize to secure the freedom of action which is essential to the success of their distinctive industry. A writer in an exchange has caught the point which we would enforce in these words: "The progressive farmer of today has vision broad enough to see beyond things material. He realizes a responsibility in aiding the achievement of a more wholesome community life. He is coming to know that the country child, his own boy or girl constitutes the central figure in building permanent rural citizenship. Surely that child is fortunately born who may live on the farm where he may trail along behind the plow and breathe in the freshness of a soil newly turned; where he may enjoy the breezes of summer laden with the perfume of a harvest time, where he may enjoy the companionship of horses and other various animals of the farm. Much of the "unlettered" education—at the same time the best education—which a boy receives comes as a natural result of being born on the farm; it is there, if anywhere in the world, that the work of a boy has in it the freedom of play, and that his play brings to him the wholesome effect of good hard work."

The farm is the birthplace of the greatest American citizenship and the time has come for the defense of that birthplace.

Royalty Goes to Farming.

Possibly some one with a taste for royalty may read these suggestions and be strengthened in his belief in their truth if we can show that the American farmers' appreciation of the dignity of his calling and its relations to national prosperity, bears the guinea's stamp. A London journal announces that Prince Erik of Denmark, third son of Prince Waldemar, Queen Alexandra's youngest brother, has been working quietly and steadily for some months past on a farm in Gloucestershire. He is about 20 years of age, has studied agriculture since he was a boy of 16 and is now on a tour of the principal European countries to obtain his finishing touches in different departments of practical farming, which is the principal pursuit of his countrymen. The main object of his visit to England is to obtain first-hand knowledge of cattle farming, wheat growing and the raising of pigs. The Danish Minister of Agriculture, M. Kristian Pedersen, has sent his daughter to London to study domestic science as a general servant in a middle-class family. It would make a pretty story if Prince Erik should fall in love with the middle-class family's serving maid and take her back to Denmark as his wife, but that would stir up the Vikings too much, probably—and that is where an American farming prince has more power than a European, even if he is up against an eight-hour law.

Do Not Go to Sleep on Rural Credit.

Some very interesting facts are now circulating through the journals which may give the impression that adequate rural credit facilities are now provided and therefore there is nothing more to be done. These statements are to the effect that about $500,000,000 will be available for loaning on farm lands by na-

tional banks under the operation of the new reserve banking plan. The estimate of Comptroller Williams is based on reports showing the capital stock and surplus of national banks to be $1,777,000,000. Twenty-five per cent of this amount, or $444,250,000, is available for farm loans. Furthermore, the federal reserve act provides that national banks may grant farm loans up to 33⅓ per cent of their time deposits. Farm loans under this act are not to be made for longer than five years and the amount of each loan is not to exceed 50 per cent of the actual value of the farm offered as security.

We presume the foregoing are facts and the reasons why they do not meet the situation in farm loans are at least two: first, the amount is insignificant to finance the farming of the whole country; second, the money is dispensed by the same good old banks which we have always had, and loans will be made, presumably, upon the same good old plan—that is, they will get all the traffic will bear for the use of the money. The plan is a distinct gain so far as it goes, for formerly national banks could not lend money on land without operating through trust companies or other roundabouts which cost the borrower too much, and now, to a certain extent, they can go straight to the land. That is all right—an advantage, so far as we know—but as a settlement of rural credit, it is a fraction of a bite instead of a whole apple, which all the national parties have promised to get for farming. Farmers have still much to do, if they care anything about it.

Cheer Up! The Worst Is Still to Come.

Judging by his letter in our last issue, Silas Wayback, farmer of the Visalia district, is entitled to rank as an economic and political prophet. He may be a little cross and pessimistic perhaps, but many of the old masters in prophecy were marred by those traits—Jeremiah, for instance, could hardly be called a hale fellow, well met, but he came through with the prophetic goods just the same. And so it seems to be with Mr. Wayback. His lamentation is that "none of the batch of propositions that are coming up at the next election are intended to help the farmer, but on the contrary, most are apt to work directly against his interest." Mr. Wayback evidently does not enjoy the ultra-paternalistic turn of affairs which he characterizes as "initiative-referendum rot," and we are wondering how excited he will get when he reads that a duly-signed petition has been received by the Secretary of State which provides for the creation of a Board of Public Industry, supported by an appropriation of $5,000,000, part of which shall be used for the purchase of factories, land or anything necessary to give employment and to produce articles which shall be sold direct to the people. The board will have the power to make contracts of all kinds and to engage in all kinds of business. Any citizen who takes an oath that he is unable to find employment must be given work, and if there is no work this board must provide him with the necessities of life. Wages will be above the stipulated minimum of $2.50 for those over 18 and $1.50 for minors. What more deadly blow could be dealt to industry than this proposition which is exalted under the name of Industry? It is, in fact, the coronation of the demon of unthrift and idleness!

Queries and Replies.

Querists must submit full names and addresses.

Bur Clover on Hillsides.

To the Editor: I have an idea that on a portion of my almond orchard on a very soft friable hillside I could use bur clover as a cover crop and mat to prevent washing, to advantage, as I notice considerable growth of wild bur clover, particularly under oak trees in this vicinity. What is the life cycle of the bur clover, when should it be planted, how late may it be plowed under in the spring, and if so planted will it be self-seeding? I have been using vetch as a fall-sown green manure, plowing it under each spring, but find that during the summer months after the cover crop is plowed under and before it begins to grow in the fall, there is great tendency for my irrigating to wash, no matter how carefully I make the contour ditches.—E. M. W., Sacramento.

Bur clover would be a very desirable plant, the seed to be sown early so as to get a start with the first rains. It will give you a much better mat for the prevention of erosion than you can get from the vetches. Bur clover (medicago denticulata) is an annual; therefore, the seed has to be sown each year unless the plant should seed itself, which is likely because when it starts early it begins to make seed low down and continues its running shoots, setting and ripening seed-balls successively. Even though you plow it under during the spring, there may be considerable seed matured on the lower parts of the plant before that time. You can buy the seed from the seed dealers cleaned of its bur which enables it to start more quickly, or if there is a considerable stand of the wild plant under the oak trees, the seed burs can be swept up in considerable quantity from the surface of the ground and used for sowing in the orchard. The plant is not a native or wild plant. It was introduced from Europe at some early date, and probably by the Spanish missionaries.

Rooting Olive Cuttings.

To the Editor: What is the best way to grow olive trees from cuttings? I have in nursery 500 cuttings 16 inches long and ¼ to ½ inch diameter. They made a fine start, but they fail to make roots. Should the cuttings be treated like bench-grafted vines in "calusing bed" before being planted in nursery?—F. L. H., Escalon.

It is not customary to use bottom heat, but it might be desirable to force such cuttings. Although soil or moisture might not have been right, your cuttings were probably not from hard enough wood. Cuttings nearly an inch and larger, root more easily than such as you used.

Cultivation of Sandy Soil.

To the Editor: I have a peach orchard on "blow-sand" in Merced county. I have given instruction to cultivate every two weeks, but my man objects that turning up moist sand loses moisture. Perhaps I am wrong in cultivating such soil so frequently during the dry season?—Owner, San Francisco.

We should say briefly that sandy soil which is gotten into good loose condition need not be disturbed by cultivation so long as that friable condition is not interfered with and so long as weeds do not grow. It would certainly be undesirable to use any form of disc or cultivator which turned up moist soil to the air, but you must look out for this: namely, that on loose sandy soils there is sometimes a firm, evaporating surface formed at a little depth and not on the immediate surface as is the case with heavy soils. When this takes place there is a loss of moisture by evaporation into the dry air which readily penetrates the granular covering to the crusting place below. To prevent this the soil should be stirred by a narrow straight-toothed harrow or a disk set upright so that there may be pulverization to a depth of five or six inches without turning moist soil up to the air. If you are sure that the cultivated layer remains loose to a satisfactory depth, it need not be stirred. But to repeat, be careful that a loose layer on top does not deceive you in the way stated.

Transplanting Olive Trees.

To the Editor: If I should get three-year-old olive trees now, cut them back heavily, and set them out in nursery form on the ranch on which I shall later plant them, shall I be able to set them out next year in place without a second severe cutting back? If I wait until next year to buy them, I shall lose a year's growth on account of the severe cutting back necessary at planting, and if I set them in place now the land will not be in as good shape as I can get it by next spring. I should like to dynamite the holes and let them stand all winter.—D. S., Sanger.

So far as our knowledge goes, you would not need to cut back heavily next year; for, after transplanting and cutting back as late in the season as this, you would not be likely to get any growth which you could call heavy. Our notion would be that you would have more growth on December 1, 1915, if you transplanted once and cut back in the spring of that year, than if you cut back now and transplanted twice, and at the same time you would greatly reduce the expense and the percentage of loss. We would say, then, go ahead with your fireworks this fall, plow deeply next winter, and transplant once for all next spring.

Citrus Budding.

To the Editor: I have a number of lemon trees, three years old, but frozen to the ground two years ago; most have come up above the bud with several stalks to a tree which now are a quarter of an inch in diameter. I desire to bud or graft (whichever is better) them to grapefruit. What is the best variety for this locality? Is it too late to do the work this year? If it is too late, should I water them as much as though I wanted the tops to grow permanently?—L. J. L., Escalon.

Budding is better for young growth such as you describe. You can put in buds whenever during the summer and autumn the bark lifts well. If you catch it soon you can get some growth on the bud this summer; if you bud late, the buds should stand dormant until spring. Whatever you do, you should use enough water to keep the trees in good condition, growing well but not too rankly. The grapefruit which is now most favored is Marsh's Seedless.

Corn Worms.

To the Editor: What is the best way to get rid of corn worms out of the corn, and to prevent them from going into the ear?—B. E. S., Ripon.

This has been worked at in all kinds of ways and no successful method demonstrated. Corn which comes right while the moth is flying always gets hit. Sometimes earlier sowing, sometimes later sowing will come through clean.

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Apple Culture in Sonoma County.

[By O. E. Bremner of Santa Rosa at the Davis Fruit Growers' Convention.]

Sonoma county and the section of California which might be roughly embraced in the counties of Marin, Napa, Sonoma, and Mendocino were demonstrated to be an apple country over 100 years ago, for in 1812, when the Russians came and settled at Fort Ross, Sonoma county, they either brought apple seed or trees and planted them on the hillside just above the old fort, and they are growing there today, about a half dozen old gnarled trees together with four or five immense seedling cherries. These apples were very inferior as far as quality is concerned and show unmistakable evidence of being seedlings. It was not until about forty or fifty years later that commercial orchards were planted in the foothills of Santa Rosa and tributary valleys. These trees were grafted stock and were, for the most part, brought from the east via Panama. Many of the trees in these old orchards are still vigorous and bear excellent fruit. We have records of trees fifty or more years old producing over fifty packed boxes of apples in a single year. One Gravenstein in particular, in 1912, produced fifty-four boxes, forty-three of which made four tiers, and in 1913 the same tree gave forty-five packed boxes.

Soils for the Apple.—The types of soil in this section are as varied as the varieties of apples planted there, and last fall at the Sebastopol apple show, the County Horticultural Commission had no trouble in displaying fifty varieties, with a possible twenty-five more that could have been added, if anyone could have been found to properly name them, and all these from the Sebastopol district. From almost pure sand to the heaviest adobe you will find the one variety predominating, the Gravenstein, this being particularly true in the Sebastopol section where the sandy type of soil is found. On the heavier soil this apple comes into bearing very slowly and makes too great a wood growth. So as the orchard section grows, the Gravenstein becomes more and more restricted to the section designated as Sebastopol, which, roughly speaking, extends along the low foothills skirting the west side of the Santa Rosa and Petaluma valley from Petaluma on the south to the Russian river on the north. The other fifty or more varieties found here are disappearing and giving place to a half dozen or more varieties, both through later plantings and through grafting over the old trees. Those which seem to give the best satisfaction, in the order in which they are produced, are about as follows: Gravenstein, Spitzenberg, Baldwin, Wagner, Hoover, Rome Beauty, Newton Pippin.

When it comes to a selection of varieties, a section must be guided by the quality of an apple, and, of course, this must be supplemented by quantity produced, not only by the individual trees, but by the district as a whole. Quality alone does not necessarily cause demand and, therefore, high prices. Quantity enters, perhaps, more strongly into the establishment and maintenance of a market. Then the first guide is the selection of the best tree, best as to growth, production, quality, and general vitality and freedom from external injurious conditions.

Selecting Varieties.—Next, varieties must be selected in pairs to assure proper setting of fruit, for practically all apples are more or less self sterile. The pairing must be according to the blooming period and in this section we find such varieties as Gravenstein and Spitzenberg, Wagner and Rome Beauty, Rhode Island Greening and Red Astrachan well adapted for alternate orchard planting. Again, in selecting varieties, it must be remembered that spraying is one of the most important operations in apple culture, and that the blooming period regulates the time of the most important of these spray operations, and for this reason an orchard should be restricted to as few varieties as practical, unless it is very large in acreage. Where different periods of blooming would give a wider range of operating time. This is, however, seldom the case, for with the best spray outfits, it is possible to put out from 1200 to 2000 gallons a day for each outfit carrying two nozzles, and with a piped outfit, fifty acres a day is no trick at all. Fewer varieties favor a better system of harvesting for the individual grower, and a better understanding of cultural and fertilizing conditions. So the point to be considered with the prospective orchardist is to select the fewest possible varieties that will give the best net results in quantity and quality, and that will bring in the greatest value for the work expended.

With the section under consideration, the Gravenstein fulfils all requirements. It is hardy, a good grower, a consistent if not heavy bearer, is particularly free from codling moth and therefore requires from one to two less arsenical sprayings than other varieties, requires little thinning, ripens very early, colors finely, and ships and keeps like a winter apple. It blooms with other apples which ripen much later, thus giving good opportunity for pollination, and no market competition.

In selecting varieties for this section, an ideal orchard would be, according to my mind, two rows of Gravensteins alternating with one of Spitzenberg or Baldwins, with a secondary orchard consisting of two rows alternating with two of each of the following varieties: Wagner, Rome Beauty, or Hoover. The last named variety while lacking in the quality of the others, is a favorite in the market and is, perhaps, a more consistent and heavier bearer than the Rome Beauty. But when it comes to a delicious table apple for the Christmas holidays, the Rome Beauty from this section is certainly almost perfection.

This selection would be strictly restricted to the Sebastopol section and would not serve as an example for other districts of even Sonoma county, for we find that not more than twenty miles away from this district the Red Astrachans reach a degree of perfection equal to that of our inland valleys, and even such neglected apples as the Red June is found in such perfection of size, color and flavor that it commands the highest prices in the Bay markets of any early summer apple. This is simply a bit more of argument for the localization of varieties.

Laying Out and Planting.—The responsibility of laying out and planting an orchard to fit all future conditions is no small matter. First, the distance; how far apart to plant to assure proper root feeding surface. We have seen twelve-year-old Baldwins growing in this same sandy soil, and planted twenty-eight feet apart well shaped and pruned regularly, but whose branches were interlapping. Surely under normal conditions no orchard should be planted closer than this, and should vary to forty feet to suit habits of growth and the congenial conditions of soil and climate. It is better to plant too far apart than too close, especially where the trees are intercropped for the first eight or ten years, as is the case in this section.

The land should be in perfect condition at the time of planting. All sub-soil or plow sole should be broken up either by dynamite or a subsoiler, and stumps and forest trees carefully removed, preferably with dynamite, and all roots possible removed before decay sets in, for oak-root fungus is a deadly enemy of the Gravenstein orchard and which cannot be cured or even checked, but may be prevented.

Apple trees should be planted as carefully as oranges. If in an old vineyard, orchard or grain land, not only should the subsoil be removed, but good top soil placed in the hole, mixed with some well rotted manure. The young trees should have all broken or partially decayed roots cut back, and as properly spaced in the holes as you expect to train the branches. It is a pretty good rule to clip off the end of each root. Budded trees are always preferable to grafted ones for several reasons; a better root system, less liability to physiological complaints and external troubles; can usually be planted deeper without placing the union too deep. But whether grafted or budded, do not plant the trees too deep—the union should be just at the surface and never over two inches below. While apples are not so susceptible to ills caused by deep planting as stone fruits, yet it does work against their proper development and often causes distress. A grafted tree is apt to send out numerous small roots around the callus, which forms an ideal condition for a severe attack of woolly aphis. It is also a pretty safe statement to say that grafted stock is more susceptible to the attack of crown gall.

In passing, it is important to emphasize the value of clean trees at planting. Trees infested with such insects as woolly aphis or flat-head borer, San Jose scale, or with root knot, canker or oak root fungus, should not be tolerated. In fact I do not believe they should be treated, for it is almost impossible to exterminate the trouble when once introduced. Commissioners and inspectors are generally too lenient. I do not believe in any form of treatment at the point of entry—absolute rejection or destruction is the only safe rule for infested trees.

Treatment After Planting.—In selecting nursery stock we do not favor overgrown stock, either forced by irrigation or fertilization, or two year old trees. The medium tree from four to six feet high, straight without a single lateral, is ideal. When planted, cut to eighteen or twenty inches. The average orchardist measures with his knee and cuts at the bud that comes the closest to that height, which, on the average man, is nineteen inches. Apple trees should be protected during the first few years of growth from the direct rays of the sun on the south and west sides. Whitewashing is good, but two shakes placed about four inches from the tree is best. The ordinary tree protector, even when ventilated, is not good as they do not give a perfect circulation of air and form an ideal place for hibernating insects, as well as a protection for cutforms and woolly aphis. It is common to see these protectors actually choked with woolly aphis deformations the second year and in such cases the trees are practically ruined.

Cultivation.—Cultivate the young orchard, keep a good dust mulch, and never under any conditions plant hay or other feed that is allowed to mature in the orchard. Cover crops turned under are, of course, beneficial if plowed under early enough, but in the case of young trees is seldom necessary and often detrimental. It gives rise to attacks by cut worms and other insects as well as attracts moles which do much damage in girdling young trees. In any case, if a cover crop is turned under, plow away from the trees. In fact, always make the first plowing away from the trees. We find a deep rooted belief that plowing to the trees retards their spring development and thus protects against frosts, but this is absolutely wrong; this early plowing does not retard the tree and often gives rise to conditions which seriously injure, if they do not cause the death of the tree.

(To Be Continued.)

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Causes of the Mottle Leaf in Citrus Fruits.

To the Editor: Referring to the announcement some weeks ago of the agency of nemotodes in causing mottled leaf, I fear that this declaration is liable to be somewhat misleading, because if its tendency to class mottled leaf as a symptom of one particular disease, that is nematode infection. At an open or public meeting at the experimental station at Riverside last fall, a paper was read on this subject and seemed to attribute mottle leaf entirely to the nematode worm. This was criticized by one speaker in the audience quite severely and Dr. Webber then stated this fact, which many growers already know, that mottle leaf in citrus trees simply indicated anemia of the tree. It meant nothing more than that the tree was not properly nourished and this was caused by many conditions. The fact of finding nematode worms in the roots of some, (not most) mottled trees would lead us to believe that they were one of the things that interfered with nutrition, but not the only thing.

While publications on this subject do not say they are the only cause, they are likely to leave that impression, which would be as erroneous as to attribute all anemia, with its accompanying paleness, in people, to tuberculosis.

The experimental station has done valuable work in finding the nematode worm in the roots of orange trees, and we hope they will soon discover some practical method of getting rid of it, but a shovel will sometimes explain the cause of mottled leaf. It is sometimes surprising what you will find under your nicely tilled surface soil if you go down twenty inches or more.

Careless handling of over-flow irrigating water is often the cause of the mottled leaf, and so are many other things. The mottled leaf to the orange grower is what the thermometer is to the physician: it simply tells him that the tree is sick and leaves him to discover why it is sick, and the grower, in order to make a diagnosis, requires as correct a knowledge of the physiology of the tree as the physician does of his human patient. He also wants to examine as carefully everything pertaining to its welfare. J. G. BILLER.

Spadra.

WORKING ONE'S OWN LAND.

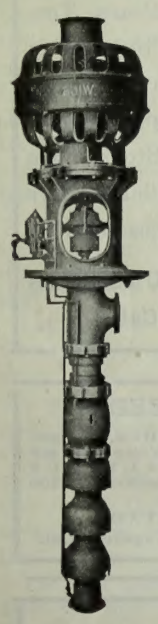
To the Editor: In reading the PACIFIC RURAL PRESS of the last few numbers on farming and the eight-hour business, I think that some subscribers have some queer ideas and I suppose that I have too. I myself do not want the eight-hour law to pass, and shall do my part in preventing it too; which is not very much. But what if it does pass. I think that we will all live through it. This business of having so much land to work that a man can never get his work done, I don't think much of. If a man has more land than he can care for right, why not rent or sell enough so that he can do his own work and do it right? I am a farmer and I consider myself better off being one than most business men. For most business men are tied right down to their business and a hired man is not his own boss. If I am working for myself and farm what I can handle, I am my own boss and can do as I like.

I have been trying to farm and work at a store, because a part of my twenty acres is in young fruit trees, which of course, do not bring in any income now. In doing so I have to hire a little once in a while. I find it very hard to find a man that I can trust to do the work, and do it as I want it done. In hiring a man he ought to do his work just as if he was working for himself. I know that I could not work for a man and demand wages no matter what they were, if I didn't do the best I knew how. Perhaps all of them do, but if so, lots of them know but very little about work. They know better how to put in time. I don't mind paying for what I get done, but I do hate to pay for what they do not do.

If we could do away with the middleman, and not have to pay him for doing nothing, we could afford to give the hired man a little rest.

I do not agree with Mr. Robinson. Instead of discouraging, why not encourage the farmer to do better and to keep their farms and make an honest living. I am sure that conscience would feel better anyway. If we would do the same as the trusts; if we were in their place; what better are we than the trusts? Let us try and stand for what is right, and better things, instead of being ready to give up as Mr. Robinson proposes. READER.

Aromas.



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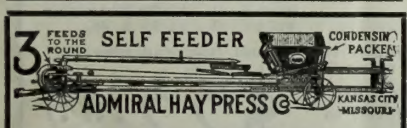

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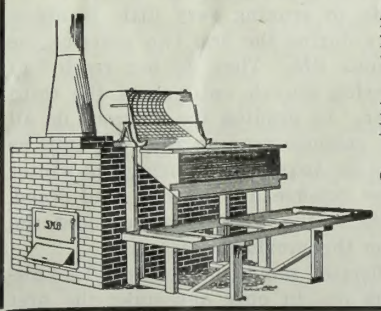

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Berries in Young Orchard.

[By M. J. Moniz, Manager of Barlow Ranch, Sebastopol, California.]

The outstanding feature of the business of fruit growing is the awaiting the day when the orchard, by its first box of fruit, will begin to pay dividends on the primary investment. Up to that time, to use a common expression, it is a question of everything going out and nothing coming in. One of the big problems of the fruit grower is, economical orchard management, and meeting current expenses. In few cases do we find the owners of fruit land placed in such a position financially as to be able to hire their work done and wait with folded arms until the harvest day. But we do find many a grower devising ways and means of meeting expenses by using some other form of agriculture on the farm. It is not my intention to discuss at too great a length the advantage of intercropping with berries, but will advocate the using of this method in most cases, while there are men who financially don't need to intercrop, yet there are many others who must do so, in order to meet the expenses that confront him soon after the land is planted out, and besides leaving him a profit which he would not have realized if he had not intercropped at all.

Intercropping with berries is an important proposition, and it puts another iron in the fire which must be handled at the proper time, and never allow one or the other to be neglected.

The next consideration of the fruit grower is to find the best outlet for his perishable product. Do not wait until the crop is ready to harvest and then hunt up the market. As soon as the grower is being confronted with these difficulties, he should at once begin to look into the advantages that are obtained by co-operation, and this should at once be practiced, also the marketing in car-load lots.

Suggestions of Policy.—Berry growing in the orchard or anywhere on the farm means a great deal of detail work, and it requires proper management, sometimes the orchard details come in at a time when the berry crop is ready for harvest, and should the grower be far from being a first-class orchardist, he must manage to secure the best of help available, in fact this ought to be done at all times, and proceed with the harvesting of his crop with as little delay as possible.

In order to properly dispose of any perishable product the fruit grower must have quick transportation, and this should be particularly observed in the handling of berries, and no holding or storing is possible. Proper equipment is an important thing to be had in handling this class of work. There will be extra teaming to do, more time spent in soil preparation, and other general operations about the farm.

Particular care should be exercised by the grower in choosing the right kind of berry for intercropping. Soil character and the climatic conditions are the main factors in the selection.

In intercropping with berries the vines are left until the trees are seven to eight years of age, and sometimes longer, all depending on the variety of tree planted out, as some varieties grow more rapidly than others, and take up more room.

After the trees and vines have been growing together for a few years it is a wise idea to pull out one berry vine on each four sides of the tree, as this gives it more room to draw from, and the other berry vines can be left to remain longer.

Details of Practice.—The soil best adapted for berries is a loose, sandy loam, or sub-clay, rather well drained. This is especially well suited for Loganberries. Mammoth blackberries will stand a much more moist soil, provided it is not sour. Lawton blackberries will also stand a fairly moist soil. For raspberries the soil must be of a deep rich, sandy loam nature.

In planting Lawtons use strong, well rooted plants and secure them from some field where no other variety grew but the one that you are planting. This is to prevent the mixing of varieties. Plant them the right distance apart, which should be eight feet each way. Press the soil firmly around the roots, and leave a little loose dirt on top to act as a mulch. The tops of the plants should be cut back to six inches above the ground to assure a strong growth of new canes for the next season.

In the selection of loganberry, and Mammoth blackberry plants, I prefer the rooted tips. These can be grown by covering the ends of the runners, or vines, several inches deep early in the fall, generally after the first rains, and left in the ground two or three months, or until they show well developed roots. These I find make better headway after planting, than the one, and two year plants. Loganberries should be planted about eight feet apart, and twelve feet in the row. By speaking of the distance in the row, I mean the direction in which the rows are to run after the vines are trellised later.

Planting and Care.—Care should be used in planting, especially with the Loganberry, and Mammoth blackberry. Dig a hole large enough so that the roots will be well distributed. Do not bunch them. Press the dirt well around them with your hands, and as stated before always leave loose dirt on the surface so as the ground will not dry and pack around the plants.

The time of planting depends greatly upon the condition of the ground, and the locality in which you are planting in. In the berry districts of Sonoma county, January is the best month in which to plant in, although good results are obtained if the work is done later in the season. The ground should be moist, but not wet during the time that this work is being done.

As to pruning very little is necessary during the first two years of the plant's life. They do not reach full bearing growth until about the third year. In pruning the Lawtons do all the summer pruning you can, until as late as August, and during the winter time remove all the old dead wood. This is the wood that produced the crop the previous season.

Berries should be staked. In Lawtons put in only one stake the first year, and the second stake the second year. In this case use a two by two, six foot stake, and drive it firmly in the ground.

After this is done tie the berry canes to the stakes, tie one-half to each side, and tie them tight, at the same time avoid breaking any of the side branches.

With Logans, and Mammoths, use a stake of same thickness, but five and a half feet long, and drive it a suitable

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distance apart, so that when the wires are stretched, they will not sag with the weight of the berries. This work should be done during the winter time, while the ground is soft.

PRUNING AND CULTIVATION. — The pruning of the Loganberry and the Mammoth blackberry is much more simple. There is very little to do the first year, but after the second year all the old wood should be removed. Do this immediately after the crop is harvested. By removing the old wood early it gives the young runners, or vines, a chance to make better headway and growth. Loganberries, and Mammoth blackberries put out runners much like the wild blackberry, and these grow to a considerable length. These must be trained on trellises, stretch the wires along the stakes, and roll the berry vines on them, dividing onehalf each way, if only one wire is used, and if two wires are used divide the vines into four parts along the wire.

Berries do not reach their full bearing stage until about the third year, and a good berry field even planted as an intercrop, in an orchard will produce from three to five tons of berries to an acre, and in some instances more, all depending on the kind of soil they are planted in, and a great deal on the care and attention given them.

Cultivation is the next important factor with berries and this work should be carried out properly, in order to insure good fruit, and thrifty vines. Immediately after the vines are set out not so much work is needed in the years that follow. Begin cultivating the ground early in the spring if the rains permit, and continue until late in the summer. This work is mainly to retain the moisture, which can be done by keeping the ground loose, and at the same time it keeps the weeds down. This will all help to increase the yield of both the trees, and berry vines. Plow Lawton blackberries twice each year, and four times every season after that, cross-plowing each time, and follow the plow with a harrow, cross-harrowing each time also.

Loganberries and Mammoth blackberries can only be plowed one way after the second year, on account of the wire trellises, being in the way and these must be plowed at least two times each season, and follow the plow each time with a harrow, and in addition to this they want to be cultivated several times, say once after each plowing.

The hoe must be brought into use after the first plowing, and the work completed before the ground packs, and drys up around the plant.

HARVESTING.—While great care is required in cultivating berry vines, as great care is required in harvesting the crop, and there are many important rules to be observed in this line.

In Sonoma county the harvest season for Loganberries, commences about June first, and lasts from five to six weeks. The Mammoth blackberry season commences about June 15, and finishes about July 20. The season for Lawton blackberry lasts about two months, generally from July 1 until September 1. All this of course depends a great deal upon climatic conditions, as some seasons berries are earlier than others, especially when there is an early warm spring.

The handling of berries for market is a delicate, and particular process. They must be picked at the proper time, and kept in a cool, shady place, and if possible hauled off to market before the hottest part of the day starts in.

In hauling them wagons with springs must be used, and avoid driving fast especially on rough roads. Keep the fruit covered up with a canvas to avoid the dust. In loading and unloading be careful not to jolt or jar the crates, and cases, or turn them higher on one end. This is something that needs to be watched closely by the field superintendent, and warehouse foreman.

MARKETING.—Our marketing facilities, are much better nowadays than they were years ago. At that time the grower had to depend solely upon the canners to use their entire output, receiving prices that hardly justified growing the product.

Today our berries are handled through a Berry Growers Association which has been in operation for five years, and during that time new Eastern markets, as well as old ones, have been developed, leaving more distributing channels in which to dispose of the crop.

A large portion of the berries are shipped East in iced cars as far as Chicago, besides many other points, being quite often from five to six days on the way, and the result is that good profits are obtained for them in return.

In order to obtain all these advantages careful attention must be paid to proper cultivation, pruning, harvesting, and all the other details that must be carried out right.

Through the co-operation each grower pays the association a small percentage for selling his crop, and the returns are pro-rated later in the season according to the price received for berries through the season, each quality, and variety, figured separately, and each grower receiving as much as the other, for the same quality, and grade of fruit.

In this manner the grower has more than one outlet for his fruit, cannery, Eastern, and local trade, as well, and a better and more satisfactory price is obtained for the fruit from all.

SELLING DUCK EGGS.

To the Editor: We have had great success in raising India Runner ducks here, and find them to be remarkably prolific as egg producers, but unfortunately there seems to be a great prejudice against duck eggs in the local market, to such an extent that it is practically impossible to dispose of them. As a matter of fact there seems to be no ground for this prejudice, for we use the eggs in our family and find them perfectly satisfactory. As the Runner ducks are quite extensively advertised, it seems that there must be a market for the eggs somewhere. Could you run an inquiry in your poultry department for information from others having these ducks as to their methods of disposing of the eggs?

I notice that in your quotations you do not mention duck eggs. Does this indicate that there is no sale for them in the San Francisco markets?—R. F. F., Carlotta, Humboldt county.

[The reason given by Secretary Laidlaw of the San Francisco Wholesale Dairy Produce Exchange for not quoting prices on duck eggs is that there is so little trading done in them by members of that Exchange that no quotations are available. Any information that other subscribers may have about their experiences in marketing such eggs should prove highly interesting at this time, as we have found by experience that what our subscriber says about the shelling-out abilities of the Indian Runners is about right.—EDITOR.]

POULTRY NOTES.

A little kerosene mixed with hot soapy water makes a very effective insect destroyer. It should be sprayed into the cracks. If you haven't a syringe use a long-handled dipper. The proper way to do the job is to make an afternoon of it. Take the family washing copper into the yards, keep it full of hot water, and do the thing thoroughly.

Don't forget that stale dirty water is a strong conveyer of disease. If the water pots are thoroughly cleansed and fresh water supplied every day, there won't be nearly so much disease noted.

Don't rush the growing pullets. Let them grow a strong, big frame, and acquire a vigorous constitution.

It is a bad sign when pullets begin to lay at 18 weeks old or so.

When such immature birds start laying, there is something wrong somewhere.

Leghorns ought to be six or seven months old before they drop the first egg, if strong stamina is to be maintained.

I know it is difficult to keep the birds back, especially when the weather is mild and springlike as it so often is in the summer months nowadays. But efforts should be made. Don't give them a lot of meat and their too rapid development may be checked if they are frequently moved to fresh yards. Fowls are funny things, and they don't like strange surroundings. When they get into a fresh yard they don't like it, and won't settle down for a week or two. If you can check them like this it is something gained in regard to stamina, as it delays the time of their turning in to lay.

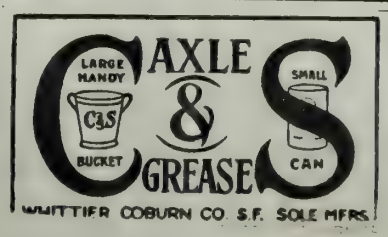
When fowls begin to sneeze and to show signs of colds, use kerosene at the rate of a tablespoonful to a gallon of drinking water. Don't allow the birds to have access to any other water, and if you keep the kerosene water up for a week, most if not all the affected birds will be cured.

Green food in the hot weather is very necessary. The saline and mineral properties in it are of particular benefit at this time of the year.

MORE ABOUT KALE.

To the Editor: In all probability Mrs. J. M. H. is feeding her fowls Dwarf Essex Rape. Two years ago I sowed a patch of rape and allowed the hens to help themselves to it. The result was that many, not all, of the eggs contained greenish colored yolks and thin watery whites. I now feed the broad-leaved kale and allow the fowls to run in the patch after it gets 2 or 2½ feet high. If allowed to run on it before that height is reached, they will destroy the center bud and stop its further growth. An acre of kale will produce 20 tons of green feed, on well manured land.

San Jose. SAMUEL HIGH.



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Constructive Agriculture—No. 26.

IRRIGATION PRACTICE IN THE SACRAMENTO VALLEY.

[By W. S. Guilford, Director of Agriculture, Sacramento Valley Irrigation Co., at State Fruit Grower's Convention.]

In discussing irrigation practice in the Sacramento valley I shall attempt to cover some of the points that seem to me to have been the cause of success or failure—both with new settlers who are buying subdivision acreages—and so-called "old timers" who are abandoning extensive grain farming wholly or in part for more intensive operations under irrigation.

Such propositions as the duty of water, cost of pumping plants, comparative value of plants of different kinds—and many other highly important factors have been, or are being, worked out by investigators with time and appliances for such careful and scientific studies. Many of the things I will touch upon are so simple and self evident that it would seem that no thinking person would ever do them wrong, yet they are repeatedly the cause of inconvenience and loss in every irrigated section in the United States.

The Choice of the Land.—Factors which govern the value of land for an irrigated farm are—character of soil, contour, irrigation facilities and transportation.

The soil should be selected with reference to the crops to be grown. In almost every part of California where land is for sale it is possible to find similar land to that which it might be thought desirable to purchase growing profitable intensive crops. If the principal crop to be grown by a prospective settler is prunes, for instance, and in the neighborhood of a piece of land he has selected, prunes are being successfully grown on similar land, he can be reasonably sure of his choice as far as crop adaptation is concerned. In general—a rich soil, well drained and free from hard pan and alkali should be chosen.

Then there is the cost of leveling to consider, and land with an even slope—free from deep depressions that will have to be filled—and not so level that it has to be moved long distances in order to make the water run, can often be leveled for irrigation for $20 to $30 less per acre than some other land.

The kind of an irrigation system from which water is to be secured—whether from gravity flow or pumping—is a consideration that affects future profits. If water is to come from wells the assurance of a supply is of importance—also the cost of pumping and maintenance: The same applies to water from a gravity project. A stream must furnish water throughout the season to be of the greatest value.

Many of the products from an irrigated farm are bulky—and transportation from the place where they are grown to the railroad or boat—and the cost of sending them to market—must be figured for a term of years. It is possible for the cost of hauling heavy crops to a loading point to be a large percentage of the total cost of production.

Unless the prospective purchaser is familiar with soil, crop adaptation, the labor and cost of preparing land for irrigation and the cost of water under different systems—he should get advice on these points from some one who does—for a place well selected and well bought is well started toward success, while some otherwise good prospective producers of crops are so handicapped by wrong selection of land that it takes years for them to surmount the handicap—if they are ever able to. The average person does not hesitate to pay for medical or legal advice. Why should he hesitate to obtain the best possible counsel on a matter that concerns his future success in so vital a way as the selection of land for a farming business?

Object of Irrigation.—Irrigation is practiced to supply to the soil in the area in which roots take plant food—a sufficient supply of moisture for the best possible development of the plant. Many different methods of applying water are necessary to accomplish this result with the different kinds of soil. This is what makes every successful irrigator a student and is the reason that an ingenious, thinking person gets better results than one who simply "irrigates" without knowing what the water is doing.

There is no better way to learn what the condition of the soil is than to dig holes in it—before and after irrigation—to find out how dry the soil is and whether or not the moisture has penetrated to the proper depth.

On one large deciduous orchard in Glenn county we have just dug good sized holes in every part where there are apt to be different soil conditions. This was done to find out how fast the moisture is drying out—how well the mulch is holding the moisture and how far down the tree roots are. The trees were planted last year. We found that wherever we were able to disc the land and get a good mulch before the soil became hard and dry—there is plenty of moisture—in one place an irrigation now will connect the lower moisture up to a place where the greatest root development is (two to three feet) before it gets so low that the tree will suffer. To irrigate now and carry these few trees through without a check is worth many times the cost of digging all of the holes.

While the water is running the depth of penetration can be determined with a sharp pointed steel rod—and every irrigator should use one of these frequently. It can be shoved into the ground easily to the depth that the moisture has penetrated.

Until we have more definite data as to the moisture requirements of plants—and some easy method by which the irrigator can test the soil for moisture content—the condition of the plant and the soil—as observed by the operator—is one of the best guides as to when irrigation is required. It is difficult to tell just what to look out for in the plant when it begins to need moisture, but the careful, observing man readily learns to recognize the signs of need or distress. For instance, the foliage on a potato plant which is getting dry becomes a dark, almost black, green which can be distinguished almost as far as the plant can be seen. It is very different from the normal, healthy green of a plant well supplied with moisture—and different again from the sickly light yellow that is produced by excessive irrigation.

In order to be of the greatest possible benefit to the tree or plant irrigated, moisture must penetrate as

Water! Water!!
Irrigation! Irrigation!!

Don't worry about a dry season. Insure against a failure of crops by boring wells, thereby securing a bountiful supply of pure water.

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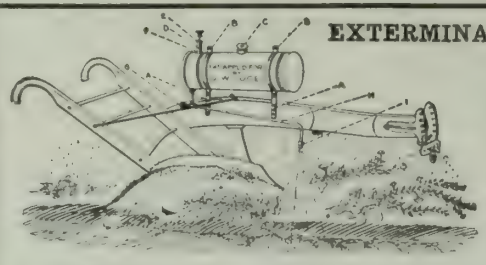

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Waste no time. Tell us how many acres you want to treat and the crop you are planting.

The growing season and not the dormant period is the right time to do the work.

One large grower purchased during 1913 $2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphis, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

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By EDWARD J. WICKSON, A. M.

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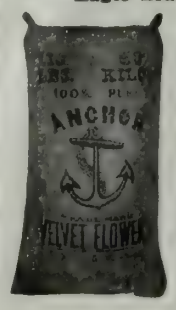

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deeply into the soil as the roots can feed to advantage. Water penetrates open, sandy soil readily—and the biggest problem in this kind of land is to get it over the surface without wasting too much through the subsoil. Checks or furrows must be short and a big head of water used.

Where the land is heavy—with a large per cent of clay and silt—as it is in a great part of the Sacramento valley—the difficulty is to get enough penetration. When the soil is thoroughly dried out to a considerable depth as it was last year—a small stream of water must be run for a long time before it penetrates three to five feet. Two years ago, at the Monroeville orchard of the Sacramento Valley Irrigation Company on the Sacramento river near St. John in Glenn county, the soil was thoroughly dri[illegible] out to a depth of 15 feet and th[illegible]ns of the winter of 1912-1913 r[illegible]ted only 2 or 3 feet and did not [illegible] the lower with the upper [illegible]e. During the season of 1913 [illegible]re compelled to run small [illegible]s along the tree rows for 10 [illegible] order to get a 3 to 5 foot penetration as indicated by the steel rod when shoved into the furrow—but irrigators were required to get this penetration—and so control the streams that very little was wasted at the end of the 660-foot rows.

In our orange grove at Orland—which is on very heavy clay land—in fact I do not know of any heavier soil in the valley—it had been the practice for years whenever it was irrigated at all—to flood the land. After Government water was available three or four years ago, it was flooded every 10 days or 2 weeks and cultivated between irrigations. This practice was rapidly breaking down the granular structure of the soil and burning out the humus and vegetable matter—and after the first irrigation after we purchased the place in June, 1912, I could find no place in the orchard where it was possible to stick a spade—or even to dig without a pick—over 9 inches into the soil. For the next irrigation we plowed 4 furrows between the rows—made head ditches and controlled the water into the furrows through lath boxes. The soil was so hard that it was almost impossible to plow the furrows, it being necessary to go through 2 and 3 times with the plow before they could be opened up enough to run water in. Too large a stream was turned in for the first irrigation—and the bottoms of the furrows silted over so that the water ran through the 400 foot rows almost as well as though the furrows had been cemented. They were furrowed out again—a little deeper this time—and a small stream turned in that required 24 to 48 hours to get through the rows—soaking in pretty well as it passed along. Such an extreme measure as this is seldom necessary but it certainly was in this case—and we kept a small stream running for 4 or 5 day periods—cultivating and furrowing out between times—nearly all of the summer season of 1912 and irrigated a great deal in the same way during the dry winter of 1912-13. The problem of getting moisture into the soil for the use of the root systems of these trees involved supplying vegetable matter to the soil in every available form—straw, manure, prunings and weeds. Now we are just getting a good enough soil condition to grow an abundant crop of wild oats, burr clover, fillaree and other plants—and we have allowed this vegetation to become quite mature before plowing it under this year. And if we can get a satisfactory seed bed soon—we will probably plant alfalfa and let it stand 2 or 3 years before plowing the orchard again—to further open up the soil and subsoil and improve its physical condition. Deep furrows will be plowed out so that irrigation water can be supplied. I do not believe this practice would be advisable unless an ample supply of irrigation water was available—but fortunately, there is no shortage of water in the Sacramento valley.

I have never seen so great a change in the character and mechanical condition of soil—in so short a time—as there has been in this orange grove—and while it is not like loose, mellow, sandy loam yet, it absorbs moisture many times more readily than before and is a far more pleasant and tractable soil to irrigate and cultivate than before. And that this treatment has been proper is conclusively shown in the increased vigor and growth of the trees and in the crops they have produced.

During the season of 1913 it was found to be difficult to get moisture to penetrate more than 9 or 12 inches in some heavy land on which there was young seeding of alfalfa. Water was delivered in a head of 5 cubic feet per second and it was ordinarily divided into 3 or 5 checks. The checks are 25, 40 or 50 feet wide and 660 feet long. By dividing the head into 10 or 15 checks and letting it run for a longer time—then turning it off these checks—irrigating some more—and then irrigating a second time before they dried out, it was possible to get a penetration of 24 to 48 inches.

So much in a general way for the object of irrigation—the importance of studying the individual case—the need of constant observation of changing conditions, and the application of common "horse sense" and judgment to the problems presented.

(To Be Continued.)

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PEACHES (freestone), 2 tons per hour. Write for Circular
Does the Work of 15 Men. Guaranteed
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For the half year ending June 30, 1914, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Wednesday, July 1, 1914. Dividends not called for are added to the deposit account and earn dividends from July 1, 1914.
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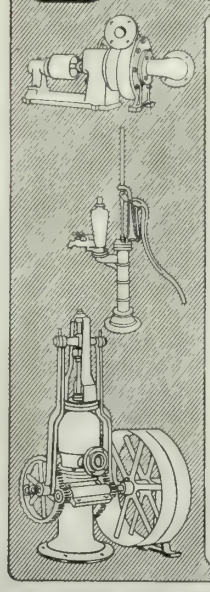

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WRITE TO US and state your requirements—by guiding you to a right selection we can probably save you both money and trouble.
FREE CATALOG 28-B describes Bean Horizontal and Vertical Centrifugal Pumps.
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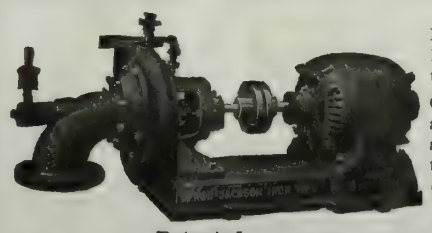

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AGRICULTURAL REVIEW.

Deciduous Fruits.

Canners in Sutter county are said to have been active buyers of peaches during the past week, prices varying from $22.50 per ton for midsummer varieties, $27.50 for Phillips, and $32.50 for Tuscans. A few freestones have been sold around $17.50. Reports from Yuba county state that both the early and late varieties of peaches will be a heavy crop there.

Several apricot buyers have been in the Hayward section of Alameda county during the past week, offering $35 per ton for apricots. Well posted orchardists in that section state that there will be about 5,000 tons of apricots harvested.

E. L. Cunningham, manager of the Lake County Canning Co., states that his company will start canning beans about August 15, and that the prospects are for a good crop at this time.

The shipping of fresh apricots and peaches is now in full swing in the San Joaquin valley, and large numbers of cars are being shipped East daily.

An experiment in shipping ripe Calimyrna figs is being tried out by James Nelson, of Clovis, Fresno county, who recently shipped 100 pounds to Chicago and New York, by the pony refrigerator service of the Wells Fargo company.

The directors of the Gravenstein Apple Show Association have definitely set the date for this year's show between August 3 and 9.

Present estimates of the apricot crop in Kings county are now given at about 1500 tons of dried fruit. The average price paid for the fruit this year in that section has been about 9 cents per pound.

Reports from Dinuba state that fruit shipments have now started in full blast, and that the Pacific Fruit Exchange has received a carload of sawdust and boxes which will be used in packing this year's table grapes.

Walnut Reports.

According to J. G. Berneike, vice-president of the Orange County Cured Fruit Association, the crop of walnuts left on the trees at the present time will average perhaps less than 50% of a full crop, but the nuts of the early bloom, where not affected by the blight, are of such large size that, if no further harm comes, the crop will amount to 50% or better. The Association will put out a Jumbo grade this year.

The Ekstein Nursery Co., of Modesto, has recently purchased 200 acres of land near Waterford, Stanislaus county, which it will plant to walnuts at an early date. French varieties will be planted.

According to C. Thorpe, manager of the California Walnut Growers' Association, there will be no trouble to sell the balance of this year's walnut crop after the first of September. A proposed general protective league for all walnut growers is now being advocated by Mr. Thorpe, the purpose being to form a league that would look after the interest of the walnut growers. It is proposed to assess all members a cent a sack for each sack of nuts sold in order to have ample funds for carrying out the aims of the league.

With Grape Growers.

Recent rains at Lodi caused much annoyance on the part of grape growers, as it necessitated the sulphuring of the vines again. Many of the growers are reported to have sulphured two and three times this year. Advices from Yuba county are to the effect that the same condition has prevailed there, and that growers are now busy sulphuring again.

Raisin growers from all over the San Joaquin valley attended the meeting held on June 30 at Fresno, at which time addresses were delivered by the more prominent grape growers of the State.

Miscellaneous Items.

The damage done growing crops in the Turlock irrigation district by the bursting of the Davis dam is said to be considerable. It seems probable, however, that it will be immediately repaired and that irrigation water will soon be available again in all parts of the district.

Petitions will be circulated in Merced county next month for the establishment of an irrigation district that will include 241,000 acres. It is proposed to leave out the Atwater section, where there has been considerable opposition advanced.

It now seems probable that three new buildings will be erected at the United States plant introduction farm, near Chico, this fall. Among the proposed buildings is a new laboratory.

A representative of the North American Mercantile Co. recently visited Hanford, Kings county, at which time he stated that from the experience in growing peanuts in that vicinity this year he believes that it would be highly profitable for farmers to grow that crop more extensively. A Japanese in that section states that plans have already been made to plant 300 acres to peanuts next year.

A great deal of difficulty is being experienced by bee men if Lyon county, Nevada, this year. It is thought that a small bug, which is infesting the alfalfa fields, is the cause of the trouble which is said to be killing the bees at an alarming rate.

About 250 farmers were present at a meeting in Ventura last week, at which time a farm bureau was established and steps taken to employ a farm adviser for that county.

William P. Roseman has been appointed state agent and demonstrator of Nevada, by the University of Nevada. He will occupy the position of federal instructor, acting under the Smith-Lever bill.

Vegetable Doings.

The Interstate Commerce Commission has suspended until January 10, 1915, the proposed increase in rates on melon shipments from California to Oregon and Washington.

Watermelons are said to be ripening fast in the Dinuba district of Tulare county, and the crop will be large, according to several large growers. The first car for the season was shipped from Dinuba last week, and another car will go out this week.

The berry harvest in the Sebastopol section of Sonoma county is in full swing, and reports have it that the growers are receiving good prices in the Middle West and Eastern markets.

Field Crops.

A field of rice near Gridley, Butte county, that has stood since last fall and went through all of the wet weather of last winter, was harvested last week. It is said that the rice turned out well, there being but a small portion of spoiled or discolored grains.

Although the acreage is small, as compared with that of last year, the sugar beet crop in the vicinity of Visalia, Tulare county, will yield well.

BREAK YOUR HEAVY SOIL OR HARD PAN WITH

BEET SUGAR LIME

This test shows the actual result of using Beet Sugar Lime on a heavy soil or hard pan—2% being added. The action of such a small quantity, certainly shows the value to your soil.

When added to the cultivating surface, 3 to 5 tons may be used with excellent results, according to the condition of the soil.

Beet Sugar Lime mixes so thoroughly that the soil never goes back to the heavy, clodded state again. And in hard pan the particles cannot cement as they formerly did, even when broken up with a subsoiler.

Irrigation and winter rains cause the lime carbonate to seep into the soil and become available to the root system, unlocking the other plant foods that were inactive in the soil.

Beet Sugar Lime contains Nitrogen, Phosphoric Acid and Potash to the value of over $2.25 per ton, in addition to the Lime Carbonate. It is not injurious to any form of plant life, making it one of the most valuable fertilizers.

Price $2.45 per ton f.o.b. factory, car lots, loaded bulk. A very low freight rate is secured. Send for sample and booklet.

BEET SUGAR LIME CO.

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Bountiful Crops

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Beautiful Grounds

Are Always Assured by Using

Campbell Automatic

Irrigation Sprinklers

WHY LOSE YOUR CROPS OR LET YOUR GROUNDS BURN UP, WHEN YOU CAN GET RAIN WHEN YOU WANT IT AND LIKE YOU WANT IT, BY USING THIS WONDERFUL INVENTION?

Placed on 3-4-inch stand pipes, 7 feet high, attached to an underground pipe system, and 47 feet apart (requiring about 22 to the acre), these sprinklers, with only 20 pounds pressure will distribute perfectly and evenly an inch of water in the form of fine rain in four hours. Price $3.00 each, postpaid, or $30.00 per dozen, F. O. B. Jacksonville.

SPECIAL INTRODUCTORY OFFER—Send us money order for $1.50, mentioning this publication, and we will mail you a sample sprinkler and our booklet, "MODERN IRRIGATION." One sprinkler only to each applicant at this price. Offer expires October 1, 1914.

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REFERENCES—Bradstreet, Dun's or Any Bank in Jacksonville.

One of the many styles and sizes of Fruit Trucks I manufacture. Sixteen years of experience has taught me how to make trucks that will stand the hard knocks and that will last. For prices and further particulars, address

BROEDEL ORCHARD TRUCK CO.,

552-556 South First St., San Jose, Cal.

It is thought that harvesting will have commenced by July 1.

Several hundred acres of rice are being grown in Reclamation District 10, near Marysville, this year. Most of the rice is now several inches high and gives promise of good yields. Harvesting will not start for several weeks.

CANADIAN AGRICULTURAL NOTES.

[Written for the PACIFIC RURAL PRESS]

To one who has never traveled through Canada there are many things of interest to be seen on a first trip. One is impressed with the fine, modern cities along the southern portion of the Dominion. Victoria, Vancouver, Calgary, Winnipeg, Fort William, Edmonton, Moose Jaw, Toronto, and others. All show evidences of rapid growth and substantial building. In most of them the people from the United States are a great factor and as a result these cities seem almost like those of the States.

GREAT ENTERPRISES. — Agriculturally the country is far behind us, though the government and some of the railway lines are doing big things to put farming upon an up-to-date basis. When the climate is considered, possibly the difference is not so marked as it at first seems. At Calgary, Alberta, the thermometer hovers around the zero mark most of the winter and sometimes goes 50° below zero. And the other points along the southern farming sections have much the same weather. At Calgary a lack of rainfall also keeps back settlement. One big irrigation system has just been completed, and the C. P. R. R. are arranging to cover a vast territory east of that place with an irrigating system that will doubtless help grain production. East of Moose Jaw, through Saskatchewan and Manitoba the rainfall is more generous and their great grain fields help feed the world. At this writing the wheat yield promises to be a little short, though an increased acreage has been sowed.

A good deal of talk is heard of more mixed farming—at present it is stock in some sections and grain in others. Practically no fruit or vegetables are grown in the vast middle section plains. Lots of California fruit and vegetables are used and one would think that the judicious pushing of California products in the territory from the Rocky mountains east to the Great Lakes would result in larger consumption.

PROMOTING AGRICULTURE. — In all large cities there are great horse show buildings and the annual show is a great society event. Recently at Lethbridge, Alberta, a committee was appointed which has succeeded in securing money with which farmers may purchase stock on reasonable terms.

The Saskatchewan Department of Agriculture has co-operated with the sheep men this year in helping them to dispose of the wool. The result is announced that this year the clip has been sold at 16½c., as against 8 and 10c. last year.

John McDougall, head of the high cost of living commission, at Edmondton, Alberta, announces that the high prices paid for grain and stock for the past few years will doubtless be maintained for many years to come.

PROGRESSIVE SPIRIT.—A train known as the "Young Peoples Better Farming Special" is now traveling over Manitoba, and is met by large crowds of young farmers, anxious to learn of the newer methods. In Manitoba the agricultural college at Winnipeg has been doing great work and in appreciation a new farm and splendidly equipped buildings, costing about $3,000,000 has been recently fitted up.

Owing to the intense winter cold and late as well as early frosts, no corn is raised, but Canada is now a great wheat and oats grower and will in time furnish a wonderful amount of beef, pork and mutton. Some alfalfa is grown, but the chief feed crops are clover and timothy hay.

THROUGH CANADA TO CALIFORNIA.—There is lots of land to be had by the pioneer yet, but conditions are not all rosy. Most of the men we have met say it is possible to make money there and when they have made their stake they will go back to the States. A large number now go to the Pacific Coast each winter for three months to escape the cold and many of them conclude to buy homes for permanent residence. FRANK HONEYWELL.

FARMERS' FREEDOM SLIPPING AWAY.

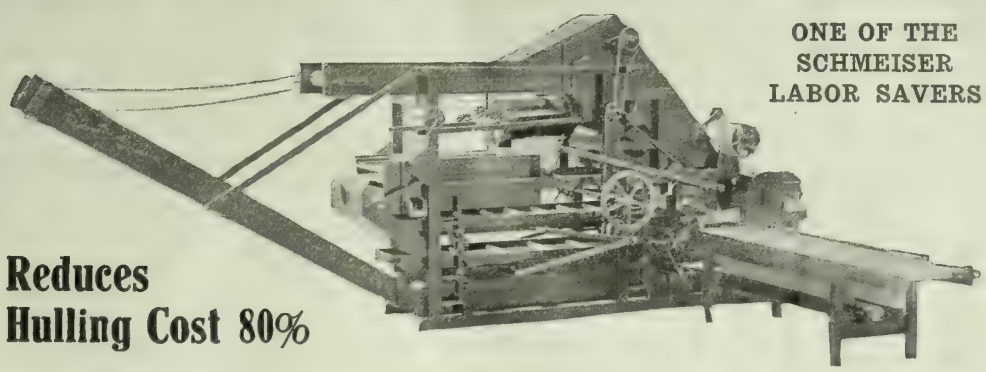
To the Editor: Having read several articles in your paper in regard to the eight-hour law, I have become familiar with the seriousness of the affair and feel that it is the duty of every farmer and his friends to stand together and fight it as long as there is anything to fight.

It is the most absurd proposition that has ever presented itself during my forty years of existence, and it only helps to strengthen the question that has confronted me in the past few years i.e. What is becoming of the freedom of the people of our great republic—and most especially of California? If we get a few more laws such as 'The Compensation Act' and some of our fish and game laws and a great many more the farmer has had no voice in framing, it will surely be a difficult matter to enjoy any of the freedom earned for us by the blood of our fore-fathers. This law is like the bond issues, just another burden for the farmer and tax-payer, but nothing to the voter who has nothing at stake. I surely appreciate the manner in which you are defending our cause.

A. M. WOLFE.

Sonoma county.

The Read Almond Huller and Separator



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YOU SHOULD KNOW ALL ABOUT THIS WONDERFUL MACHINE

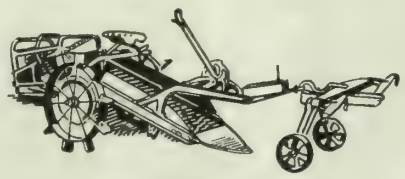
Write for Folder Now.

Schmeiser Mfg. Co.
Box 123, DAVIS, CAL.

$45.00 SAVING Introductory **Special Sale** **$45.00 SAVING**

The National Potato Digger

FREIGHT PREPAID TO ANY POINT ON PACIFIC COAST



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Cut out this advertisement. It is worth $45.00 to you. This National Steel Frame Elevator Digger has always sold for $125.00. It is listed in our catalogue at that price. For the purpose of introducing this wonderful digger we are offering them directto the rancher at $85.00 each, freight prepaid. We give you this saving instead of paying it out for salesmen's salary and traveling expense to come and see you. This is a $40.00 saving on the regular price plus $5.00 for freight, making a $45.00 saving in all. Digger is guaranteed superior in construction to anything you can buy. Thorough free trial allowed. Full description given in our 300 page catalogue, mailed on request. Write today.

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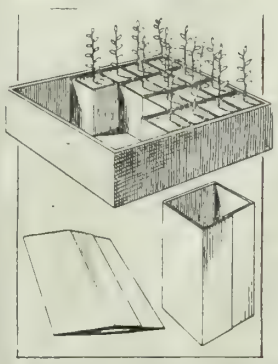

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THE MOST UP-TO-DATE METHOD FOR PROPAGATING PLANTS

no roots to be cut or torn apart. What's the result? Every plant or tree grows that is raised in these Pots.

For **Truck Gardeners,** for Early Melons, Tomatoes, Cabbage, etc., they are the thing.

Write for sample and price. We also Manufacture Perforated Tree Protectors. Over Three Million of them sold last season.

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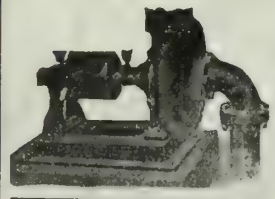

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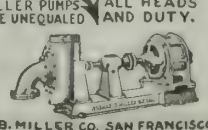

A PUMP OR ENGINE BOUGHT OF US IS GUARANTEED

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He Doesn't Like Something.

To the Editor: Why do you continually antagonize the farmer in regards to his advocating a co-operative commonwealth? The consensus of opinion is against you in this neighborhood on that score. You speak of losing our incentive and individuality through this present system of individual ownership. For the life of me I can't conceive of anything on this earth that is more detrimental to incentive than this constant robbery of the producer by the jobbers, middlemen, commission-merchants, bankers, and trusts.

Dig up your old text book on economics and find out the real cause of incentive. I am quite sure it isn't a mortgage at 8% on a yearly income of $2000, discounted by an expenditure of $2500.

Apparently you are a stockholder in some corporation, trust company or bank, if not, then co-operate with the farmer. Their welfare is your welfare.—E. A. BACHMAN. Campbell.

[Your statement does not seem to be very clear. We cannot see just what you are driving at but you have our best wishes for hitting it, whatever it is.

First, we will trade all our bank, corporation or trust stock for yours. Please send it up by freight as we cannot afford express charges.

Second, we have been pushing co-operation in these columns for 39 years but we have no use for a "co-operative commonwealth" if by that you mean a "nationalistic," "socialistic" dream which has turned wheels in men's heads since the time of Plato (and how much longer we do not know) and has never ground out anything. You say we speak of "losing incentive and individuality through individual ownership." You do not read straight; we spoke of losing incentive by *destroying* individuality and private ownership—which is just the other way around.

Third, such co-operation as we have always advocated is the only visible means of overcoming the robbery you speak of. We are just as much against that as you are and our way is sure to work, if farmers will organize and put it in practice. It is a plain business proposition; every one is doing it against the farmer but he will not do it in his own behalf.

Fourth, as for economics, that science teaches us that a man has no right to spend $2500 on a $2000 income. What consolation is there in economics unless farmers combine to make economics work for them? They can get fair interest by getting together and they can get everything else that is fair. But they can get nothing by dreaming but a mouthful of wind. Read Job XV, 2 and 3.—EDITOR.]

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Why not sell your high-priced land and buy finest irrigated lands in Stanislaus County on ten years time. 20-ACRE TRACTS, $350 DOWN, $350 YEARLY. Ideal for garden truck, alfalfa, fruit, dairying, chickens, ample water to high point each tract. Only 2 miles City Oakdale, with 3 railroads, canneries, creamery, markets, high school, 2 banks, 2 newspapers, good roads, splendid climate. Success and increased value assured. Every buyer satisfied and making good. Circulars free.

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160 Eleventh St., San Francisco.

WHAT DOES YOUR DEED SAY ABOUT WATER?

To the Editor: Three years ago I bought a piece of land, on which a land company is holding a water right. I had a lawyer look through the abstract in which it says that I have only the use for domestic purposes of any of the waters arising on or flowing through or over the property, and the company has the right to the waters uninterrupted flow through and over the property, by their natural channel or channels, and the right to divert water from them.

There is no water on my land. There was only a little overflow last winter, so to be sure it was not underground water they wanted to hold, I asked the lawyer, if I could put a well down and irrigate from it. He said yes. So I thought it was all right until I bought another piece of land; in that abstract they hold the water that is flowing over, under, and through the land—which may be a mistake in the abstract, as the names are the same and it is recorded on same page and same book of deeds.

The notary public said both abstracts meant the same, so I went to the same lawyer again. He would not deny what he had once said, but he was sure the company would not stop me as it would be a benefit to them if I found water.

As I do not want to depend on what the lawyer said, I would like to have you answer the question, whether the company can stop me or not. It is a very dry country and I need the water more than the company, as they never did use any of it, and it seems as though they never did anything to hold their right. They irrigate several miles from here out of a creek which is not on the same channel I am on. Old people say that the company filed on all creeks around here, even in the mountains: and sold the land for irrigation, but never put any water on it, except one place, where a woman made them put down a small well. There may not be water enough for irrigation, but I want to know if I can hold it before I hunt for it.—READER.

ANSWERED BY SYMMES, MEANS AND CHANDLER.

I am returning herewith letter of J. Charles Wolff asking questions regarding your subscriber's right to pump water under certain deeds, it is stated that in one deed a reservation is made of all water flowing through and over the property, and that in a second deed the reservation is for "all water flowing over, under and through" the property. The right of the present owner to pump water from underground sources rests entirely upon the expressions used in the deeds, as a grantor has the perfect legal right to make any reservations of this kind which he desires.

In southern California a great many estates have been subdivided and sold in small tracts with the reservation that all waters, either surface or underground, on or under such land, shall remain the property of the original company, with the exception that the purchaser may use water for domestic and irrigation purposes on the tract purchased.

In the case under discussion it seems that the grantee is given the right to use water for domestic purposes only. The deeds will have to be inspected in order to ascertain the rights of the purchaser to develop underground water. A. E. CHANDLER.

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FOR SALE—Peach, apricot, plum, prune, fig, apple, pear, and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants; elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRINK & KOHMAN, Nurserymen, Box 1212, Fresno, Cal.

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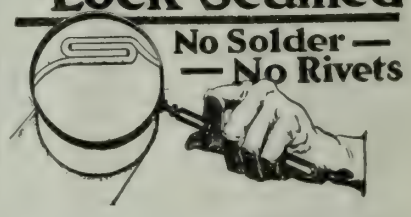

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is constructed without solder or rivets. Nothing but the sheet of metal itself is used. Each sheet is edged, locked together and then set down under 3500 pounds pressure. Special machinery does the work.

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It tells all about irrigation pipe and its construction. After reading it your judgment will tell you which to buy. Get it—today.

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THE 1914 BARLEY CROP AND LIVE STOCK.

(*Continued From Page 1.*)

have fed large numbers of beef animals on a ration composed of alfalfa hay and crushed barley, and while they had always considered it profitable, it was not until last year that they secured reliable data on such feeding.

As these tests were made of a cross section of their many ranches in the San Joaquin valley and included almost 2,000 head of cattle, they should prove highly valuable to feeders in the future.

The hay fed was measured beforehand, and tests were made throughout the feeding season to ascertain the daily ration, so it will be seen that the figures are trustworthy for all practical purposes.

On account of shipping some of the stock to market before the end of the season, and taking others out that did not gain fast enough to justify the expense, the tests were not so satisfactory as they would have been if they had been figured on a large bunch that could have gone through the entire season. However, experience shows that such factors are most likely to occur in feeding practices of this kind.

In one lot upon which tests were made there was an average number fed of 750 head, whose average weight at the beginning of the season was 1357 lbs. Starting December 10, this lot was carried for 110 days, receiving a daily ration of 26.5 lbs. of chopped alfalfa hay and 6.7 lbs. of crushed barley, or a total of 2915 lbs. of hay and 737 lbs. of barley for the season. A charge of 2c per day was added to the cost of each steer for labor of feeding, making a total of $2.20 for the season.

The average gain on the lot, for the feeding period, was 175 lbs., or a daily gain of 1.6 lbs. When purchased these animals were worth 6c per pound, or $81.42 per head, that being the market value of grass-fed stuff at that time. When sold they brought 7c per pound, or $107.24 per head, making a total gain in dollars and cents of $25.82. With alfalfa selling for $5 per ton and barley at $1 per hundred, many are receiving less this year, it will be seen that the feeder would receive $8.97 more for his feed than if sold to grain and hay buyers. From this there should be deducted interest on money invested, which would be offset to a large extent by the value of the fertilizer obtained.

The second lot consisted of 960 head, whose average weight was 1260 lbs. This lot were fed a ration of 25.3 lbs. of chopped alfalfa hay and 5 lbs. of crushed barley for 123 days, making an average gain during that time of 163 lbs., or 1.33 lbs. daily.

On the same basis as the above lot, it was found that this lot cost on the average when purchased $76.08, and were sold for an average price of $100.17, or a difference of $24.09 for feed and care, which amounted to $16.61 at prices quoted for feed and labor in lot No. 1. The margin of profit in this case was $7.48 per head.

A significant thing about these tests is that the biggest margin of profit was found in lot No. 1, where nearly one-fourth of the ration was barley, lot No. 2 having received a ration of one-fifth barley.

The common objection to this method of feeding, in years like the present one when wild feed is abundant, is that it pays better to run the stock on pasture. Undoubtedly this would be true if the same price per pound could be secured for grass stuff that can be for grain-fed stuff; but as such is not the case, it would seem that a great amount of barley could be profitably fed to steers this year, even though the supply of such stock is limited.

Grain-Fed Hogs.—Although there has been much progress made in the feeding of barley to hogs in the State, there is still much room for enlarging this practice due to the large amounts of hogs raised by alfalfa dairymen, who have mostly turned off a skim-milk and alfalfa hog, or at best one that had only been grained for a short interval just before selling.

Those who have given the matter of feeding more careful attention have invariably found that to feed barley profitably it should constitute a part of the ration from the time the pigs are weaned until they are sold, and when this is done the buyers are willing to pay a premium of from one-half to one cent a pound, over the skim-milk and alfalfa hog, for grain hogs kill out a larger percentage of good meat than the others and are therefore worth more when butchered.

Many hog raisers have even found it profitable to feed a ration composed entirely of barley, and it is no uncommon sight in some districts to see farmers turn a band of hogs into the barley fields to do the harvesting, even in years when prices for the grain are higher than they now promise to be for this year. Authorities estimate that it takes about 425 lbs. of barley to make 100 lbs. gain, providing hogs are fed grain from the weaning stage.

W. L. Morris, of Yolo county, found after accurate tests with ordinary stock hogs that he received $1.75 per hundred for barley when that was the sole ingredient of the ration.

The fact that hogs are scarce this year does not necessarily mean that we are unable to consume more barley in this way, but on the contrary, and even in the face of this shortage, farmers could feed many thousands of tons more than they are accustomed to.

Dairy Cattle and Barley.—The idea of profitably feeding barley to dairy cattle is a radical change from former methods, and one that has only been practiced by breeders who were doing official testing; yet, according to Prof. F. W. Woll, of the University of California, who is a recognized authority on feeds and feeding, and who has prepared the following statement for the Pacific Rural Press, there is also an opportunity for an increased home consumption of this year's barley crop with such animals.

On this subject he says in part: "Contrary to the opinion held by many farmers, barley is a good feed for dairy cows. It is the standard grain feed, along with oats, fed by Danish and other European dairymen, and is also fed quite generally by American dairy farmers with excellent results. It may be safely fed in considerable quantities to dairy cows and makes an economical feed at ordinary prices for feedstuffs in this State. The advantage in feeding grain with alfalfa would be, a larger production of milk and butter-fat and a better body condition of the cows than that resulting from feeding only roughage. While there is not much direct evidence that these results will always be reached by feeding barley to dairy cows, the experiments that have been conducted fully bear out the statement made, and the experience of practical dairy farmers goes in the same direction.

"Without going into the matter in any detail, I may say that according to the total contents of digestible matter the feeding values of barley and alfalfa stand in the ratio of 73.8 to 53; according to Armsby's energy values, as 80.75 to 34.41; and according to the feed-unit system, as 2 to 1. The last ratio is doubtless the most correct one in this particular case where the value of feeds for dairy cows is considered.

"If we accept, therefore, the ratio of 2 to 1 for the relative value of barley and alfalfa for dairy cows, we conclude that if alfalfa costs $10 per ton, barley will be worth $20 per ton to the dairy farmer; if alfalfa is worth $15 per ton, he can afford to pay $30 for barley, and if it can be bought for less, it will pay him to feed it in preference to alfalfa to the extent of some 4 to 10 pounds per head daily, according to the production of the cows.

"If considerable grain is fed, it is always a better plan to feed a mixture of several feeds rather than a single one: for instance, barley and middlings, or barley, middlings and dried beet pulp, mixed in equal parts by weight, if of similar market value."

The above-named animals in connection with an increased consumption through horses and poultry, should aid greatly in solving the marketing questions of this year's banner barley crop, and allow farmers to benefit by the generous manner in which Mother Nature has provided us with bountiful crops.

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For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

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California Fruits and How to Grow Them

BY

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June, 1914.

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PACIFIC RURAL PRESS

420 MARKET ST., SAN FRANCISCO, CAL.

PUBLISHERS

Marketing Farm Butter.

[Written for the PACIFIC RURAL PRESS]

Selling butter made exclusively from the milk of tuberculin tested cows, is an innovation in dairy practice in this State, and one that is meeting a marked degree of success by the owners of the Elder Creek Jersey Farm, near Florin, Sacramento county. Started primarily for the purpose of breeding registered stock, and with the view of building up a badly depleted soil, the business is growing to such proportions that the owners have found it impossible to keep up with the demand for such butter from their own herd.

Although the making and selling of butter has been practiced on this farm for a number of years, it is only during the past year that an effort has been made to specialize on that branch of farming; and in doing so, they have accomplished much toward the elimination of middlemen, which is not commonly seen in the marketing of dairy products.

When the present herd was purchased from L. Eaton of Cosumne, Sacramento county about a year ago, the need of testing for tuberculosis was felt by the owners; as in their opinion the selling of pure-bred sires would be more easily accomplished if they could furnish a clean bill of health to the buyer.

With this in view the herd was tested and all reactors disposed of, which left a herd of some forty-five head of cows; over twenty of which were registered. Most of the others were of pure breeding but their registration papers had been lost.

Having had considerable success in disposing of smaller quantities of ranch-made butter to friends and acquaintances in the city of Sacramento, Messrs. Smith decided that by churning their own butter from the increased herd they could dispose of the larger quantity in the same manner. For that reason they installed, at a very moderate expense, a small churn, refrigerator, and other necessary equipment. In broadening their market, they solicited orders from those who were recommended to them as being desirous of a high grade of butter.

No extra premium was demanded for this butter, the selling price being controlled by the highest retail selling price, which is always several cents higher than the wholesale price.

At the start about fifty pounds per week were sold in this way, and since that time weekly sales have increased regularly, until at present some 500 pounds are being supplied to the city trade. Of this amount only a small portion goes to one restaurant, and a grocer as left overs; but the amount sold in this way has become smaller all the time, as the consumer becomes better acquainted with the Elder Creek brand.

With the increased market, it has become necessary to increase the production also, and as the ranch has been carrying about all of the stock that is possible, it has been necessary to purchase some fat from neighboring farmers. In doing this a premium has been paid with the understanding that all fat purchased must be from tuberculin-tested cows.

Taken as a whole it has not been easy to maintain such a large herd on the sixty acres of land, in this ranch, for the reason that much of the soil is badly run down and in many places is shallow.

It was due to these conditions largely, that the plans for the new dairy were first made; as the soil, which is of a red dobe nature, has been completely run down through years of one crop practices.

At the start it was necessary to develop water for irrigation, and even after such water was developed, it was an up-hill job to get a good stand of alfalfa; but this is gradually being accomplished, and most of the ranch will be seeded to alfalfa in the course of another year.

In order to add to the production of good feed, several acres have been devoted to corn the past year, and a silo erected. In this way, with a small crop of alfalfa hay, and some pasture, the owner was able to carry his herd through last year's dry season, by using corn silage as a supplement, and by purchasing a small amount of hay from the outside. An objectionable feature to a scheme of this kind is the added expense of making butter in such small quantities, the argument used, being that a larger amount can be more economically manufactured in a centralized plant. This would probably be true on this ranch if it were not for the manner in which things are run.

The making of 500 pounds of butter weekly is a small job for an experienced butter maker, and does not require all of his time in this case. For that reason milking machines have been installed during the past six months. By the use of these the butter maker is able to do the milking, separating, caring for the milk houses, and the churning. In that way the cost of butter making is cut down to a minimum.

All wastes are eliminated by selling the buttermilk in the city at 25c. per gallon, and feeding the skim milk to the hogs at home.

Another feature which will add to the revenue of the ranch in the future will be the selling of pure-bred sires and in this respect it might be interesting to know that all cows will be officially tested in time, although at present the owners are satisfying themselves by doing their own testing.

There is likely room for much expansion of this business in other towns and cities as well as in Sacramento for it is evident that consumers are anxious to purchase a high-class butter at a reasonable price.

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In 1909, its first year, sold 200
In 1910, its second year, sold 300
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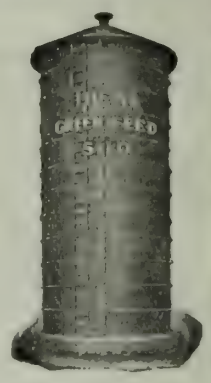

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THE CELEBRATED DAIRY HERD OF BROWN & BRANDON,

in Hicks Valley, Marin County, California, consisting of

330 Ayrshire COWS
48 Ayrshire Yearling HEIFERS
100 Ayrshire Heifer CALVES
14 Ayrshire BULLS
32 Head of HORSES
400 Tons of HAY

And all implements and equipment found on an up-to-date Dairy Ranch. The ranch consists of 3,300 acres, but is divided into four separate places, each of which has its own house, barns, outbuildings, and every necessary implement and equipment for independent operation as a first-class dairy ranch.

RETIRING FROM BUSINESS

For Terms and Particulars address

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POLAND-CHINA HOGS
LARGE TYPE
YOUNG STOCK FOR SALE. BOTH SEXES.
THE BROWNING STOCK FARM.
W. H. Browning, Prop. Woodland, Cal.

With the Live Stock Men.

In a communication to this office, Mr. Geo. A. Smith, of Corcoran, Kings county, states that it is now being planned to erect a live stock sale pavilion, either in the town of Corcoran or on the Smith ranch. The pavilion will be round and have a seating capacity of 1000 people, arranged in theater style and thoroughly up-to-date for sale purposes. He also states that according to his present plans he will hold two sales of registered Holsteins annually, one in the spring and one in the fall, which in connection with two sales a year of Poland China swine will make Corcoran a great center for pure-bred live stock sales. He states that his next sale of Holsteins will be held sometime after November 1.

Cattle shipments have started from Oakdale, Stanislaus county during the past week, Moffett and company having shipped several carloads last week to San Francisco.

H. Levy and Company of San Francisco, have shipped during the past week, 37 carloads of sheep from Winnemucca, Nevada, to Pixley, California. The shipment was made up entirely of wethers. The sheep were purchased at $3 per head.

The Inyo and Bishop creameries have both passed into the hands of a new association, which will be known as the Inyo Co-operative Creamery. F. R. Falls is acting manager of the new concern.

Due to the fact that a large number of sheep men had made previous sales of wool, the Cloverdale wool sales day recently held, did not bring out as large an amount of wool as usual. Prices for that sold, averaged 21c. for short wools, and 23c. for years fleece.

An undertaking that is to be known as the Abelour Pure Bred Dairy company, has been launched at Bishop, Inyo county. It is the intention of the organizers to turn the 2000-acre Longley ranch into a pure-bred Holstein breeding establishment and steps will be taken at once to secure stock.

A herd of 13 registered Guernsey heifers has recently been received by W. J. Higdin, of Tulare for foundation purposes from the east. Mr. Higdin has long been a leading spirit in the fight for better dairies and better dairy animals in that section, having had the highest producing herd of grade cattle entered in the Tulare cow testing association last year, which were Jerseys.

According to grazing examiner A. E. Aldous, of Nevada, there have been serious losses among cattlemen in the Ruby forest through poisin from Larkspur, and for that reason it is proposed to cover the pastures with large flocks of sheep, those animals not being affected by the grass.

W. W. Verner, of Los Angeles, recently purchased four carloads of very fine dairy cattle from H. W. Krotz, of Imperial valley. The 90 head sold for an average price of $100.

Reports from Manteca, San Joaquin county, state that the old creamery there, owned by Ed Powers, has been leased to two creamery men from San Jose who will open it at once. With the growth of the dairy industry in that section a creamery should prove of considerable value to the community.

A train of 16 carloads of sheep and cattle was recently shipped from Colusa and Meridian to San Francisco.

One of the most successful auction sales of dairy cattle this season, was held last week on the Lucas ranch near Modesto. The 48 grade Durham and Holstein cows sold for an average price of $90. The highest price paid was $140.

The Cattle Owners Association of Nevada, held their regular meeting at Elko, Nevada, last week, at which time resolutions were adopted, urging the legislature to pass a law requiring the inspection of brands on cattle shipped out of the State. Many other important matters were discussed at length, the meeting being well attended.

From a daily output of 275 pounds of butter, the production of the Oakdale creamery at Oakdale, Stanislaus county, has now been increased to 700 pounds daily. The cream checks for the past month from that creamery amounted to $10,000.

The new cheese factory of the Los Molinas Land company, commenced making cheese June 15. The factory is located near Dairville, eight miles north of Los Molinas, and is said to be thoroughly up-to-date.

The Webb ranch, near Gazelle, has recently been purchased by L. M. Foulke, who intends to start herds of pure-bred Duroc Jersey swine and Holstein cattle. Mr. Foulke paid this office a visit recently at which time he stated he was in search of some good brood sows and a boar.

Twelve carloads of thoroughbred cattle belonging to the Brighton Mill company, have been shipped from Fitz, San Joaquin county, to Shippee, Butte county, where they will be pastured on the grain and hay fields that have been badly damaged by rains.

Dr. Warrington in Chemistry on the Farm states that for each 100 pounds of feed consumed, the different farm animals make gains as follows: Cattle 9 pounds; sheep 11 pounds and pigs 23 pounds. Pigs then make nearly two and a half times the gain over cattle for the amount of feed consumed.

Prices for cattle at the Portland Union Stock Yards, for the past week, were firm for the first part of the week but eased off toward the close, especially on medium grade stuff which comprised a large part of the week's sales. Prices were $7.50 to $7.65 for best light fed steers; $7.25 to $7.40 for grass fed; $6.50 to $6.65 for cows and $4 to $5 for bulls. The run of swine for the week was not large and the market held steady at 8 cents. Sheep house continued to hold strong. Receipts of sheep and lambs were good, and prices steady with last week. Top yearlings sold around $5, two-year-olds $4.75, ewes $4.25, lambs $6. Mutton trade in excellent shape.

MORE MILK AT LESS COST

500 LBS. MORE MILK per day by feeding LARROWE'S DRIED BEET PULP

READ THIS LETTER from Hutton Bros., proprietors Dixon Certified Milk Farm, Dixon, California:

"It might be of interest to you to know the results of feeding Larrowe's Dried Beet Pulp at our dairy. We are milking 167 cows and are feeding 1200 pounds of pulp per day about 7 pounds to the animal. The pulp is fed in addition to a grain ration of 5 pounds per animal, together with all the alfalfa hay they will eat. As stated above, the grain and hay is our regular ration, and the beet pulp increased our milk yield almost 500 pounds per day. The increase was during the stormiest and most uncomfortable weather of last winter. When we were getting these results from this method of feeding, our supply of beet pulp was suddenly exhausted and for several days we were unable to get any more because of the washouts on the railroad. Our milk output almost immediately fell off the amount of increase mentioned, thus furnishing absolute proof that the pulp is to be given credit for our unusual milk yield, which has again attained the maximum since we obtained a fresh supply upon the arrival of the delayed carload. We unhesitatingly recommend beet pulp to any and all dairymen who feed for results."

Be sure you get LARROWE'S Dried Beet Pulp. It is uniform in color; never blackened or burned.

Larrowe's Dried Beet Pulp is clean, healthful, succulent, and will not only increase your milk yield, but also keep your stock in better health and condition.

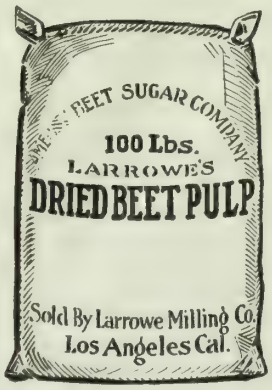
It is simply the pure shredded root of the sugar beet with only the sugar and water extracted. Always uniform. Keeps indefinitely. 1 ton contains as much nutriment as 5 tons of silage. It is light, bulky; aids digestion and is a wonderful feed for dairy cows, hogs, horses and poultry.

Get 1 Sack From Your Dealer Today and prove its worth by feeding to one cow whose milk record you know. You'll get instant results.

"PROFITABLE FEEDING" —our illustrated booklet giving feeding instructions and other information—will be mailed free on request.

THE LARROWE MILLING CO.
607 Central Bldg.,
LOS ANGELES, CALIF.

Some feeders prefer Larrowe's MOLASSES-Dried Beet Pulp for its sweetness. Just the plain pulp with beet molasses dried. Fine for fattening, also for horses.

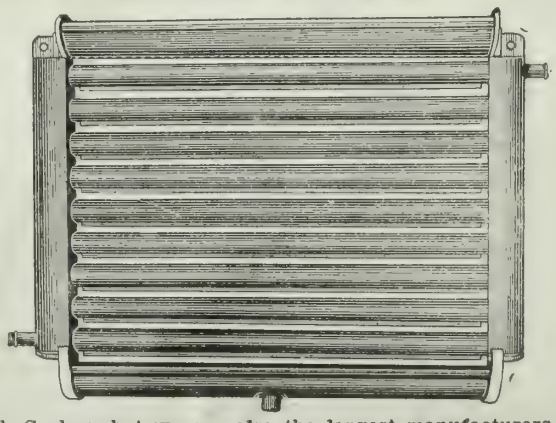


HAVE YOU A COW?

HAVE YOU A CREAMERY?

HAVE YOU A CHEESE FACTORY?

Yes, Mr. Dairyman, we can save you money on a **Milk Cooler.**



We not only sell Milk Coolers, but we are also the largest manufacturers of Milk Coolers in the Southwest. Why pay freight from the East and a middleman's profit when you can patronize home industry and save 40 per cent?

Kelsey Tubular Milk Cooler

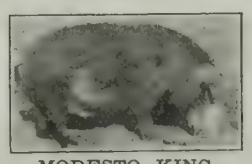
is made in all sizes, composed entirely of copper and brass, well tinned and will stand 100 pounds pressure. It will cool the milk to within one degree of the temperature of the water and is highly endorsed by all sanitary official experts.

Kelsey Copper Tubular Coolers are made in all capacities. Efficient, sanitary and very durable.

The Kelsey Copper Cooler has a capacity of 35 gallons per hour and will cool milk within 1 degree of the temperature of the water.

Write us for further information and prices.

Guy F. Kelsey Company
106 East Eighth St., Los Angeles, Cal.



MODESTO KING
1st prize aged boar at 1913 State Fair

Put your low-priced barley into good hogs this fall

Have 85 suckling pigs to pick from now. Ten more sows to farrow soon. Will have 20 bred gilts, also service boars for sale after showing at State Fair in September. Hogs are scarce. Order now for fall delivery.

DUROC-JERSEY FARM,
JNO. J. DAGGS, Prop., Modesto.

Feeding Farm Animals Silage.

[Written for the PACIFIC RURAL PRESS]

With the sudden activity in silo construction that has taken place in the State during the past two years, large numbers of stockmen are undecided whether it is best to build one or more, until such time as they have undergone a more thorough try-out.

On the Hopland ranch, near Hopland, Mendocino county, which belongs to A. W. Foster, the silo has been thoroughly tried out for the past ten years with the result that two new silos have been added this year, making a total of four, now on that ranch.

The first silo was erected some 10 years ago, being made of resaw and rustic. At that time a dairy was being run on the ranch and the silo was found to be a valuable asset, inasmuch as it furnished a succulent feed during times of the year when other green feed was not available and also turned the first cutting of alfalfa, which was in many instances badly infested with foul weeds, into excellent feed. Indian corn was also planted and that too proved well worth the cost of raising and siloing.

At that time, the one silo, which had a capacity of about 100 tons, held a sufficient amount of silage for the stock maintained on the ranch, but about four years ago the need for more such feed became apparent and another silo of the same capacity and construction was built.

Soon after this latter one was erected, experiments were tried out in feeding between 200 and 300 head of grade sheep. The flock was fed in a sheep barn, the ration being composed of chopped alfalfa hay and about three or four pounds of silage daily. By feeding those amounts it was found that the gains were very satisfactory. So far as the owners were able to see there was not a single case where the silage had any bad effects upon the sheep and they consider the feeding of silage to sheep entirely safe, and highly profitable, so much so in fact that they now have a silo erected at the sheep barn, which will in the future be used exclusively for those animals.

The need for still more silage was again felt about two years ago when the present herd of registered Shorthorn cattle was founded and accordingly, two more silos have been erected during the past spring, which are now filled with first cutting of alfalfa.

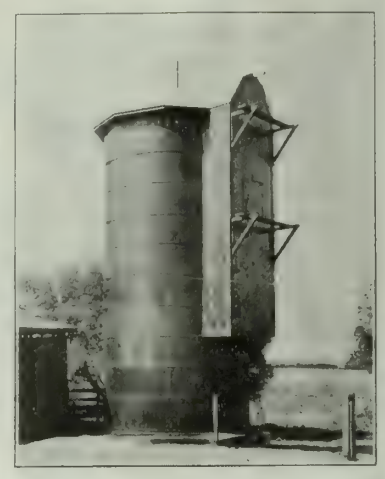
These two last silos are of the stave type, having been erected by the Redwood Manufacturing company. Mr. Foster states that while he found the resaw type highly satisfactory, he believes that the stave kind will prove more lasting, besides presenting a much better appearance.

For the past two seasons no corn has been planted, the first cutting alfalfa being the only feed siloed and though it is not considered so good a feed as corn silage, the results have been better than if the feed had been made into hay, which would of necessity have been of poor quality. The herd of beef cattle has been maintained on a ration of about 25 or 30 pounds of this silage and all of the chopped alfalfa hay that they would eat.

It will be seen from this that silage is the chief feed and it is also interesting to note that the stock have kept in remarkable fine condition on such a ration.

Not only is Mr. Foster an enthusiast about silos and silage, but he also has nothing but praise for chopped alfalfa hay, and it is for that reason that all of the hay fed on the ranch is first run through the feed cutter and in this way practically all waste is eliminated.

By using the more progressive meth-



One of Two Redwood Stave Silos, 14x30, on Hopland Stock Farm.

ods of feeding, and by maintaining nothing but pure-bred stock on this ranch, Mr. Foster hopes to have one of the finest breeding establishments in the country in a few years. With that end in view he now has an excellent herd of Shorthorn cattle, a flock of registered Shropshire sheep and a pure-bred Shire stallion, besides a large stud of Welch ponies and one of the largest flocks of white leghorn chickens in the State.

PASTURING OR RACK FEEDING?

To the Editor: I have 162 acres of three-year-old alfalfa, with a sufficient amount of water to irrigate at regular intervals during the summer months. Can I get better results from pasturing dairy cows on the alfalfa or by cutting the alfalfa green and feeding it in the corral? What are the advantages and disadvantages of both methods?—Old Subscriber, Gonzales, Monterey county.

[Your question is one that has been discussed in these columns many times and the arguments put forth have all been in favor of corral feeding or soiling.

Aside from the fact that feeding in the racks makes a lot of extra work, due to the daily hauling from the field and the extra time spent in mowing small amounts at a time, there is no objection, so far as we know, to that system, while the practice of pasturing has a number of objections; namely it is a bad thing for the alfalfa, as the sharp hoofs of the cows do considerable damage to the alfalfa plants, cutting the crowns, etc.; there is a big waste in pasturing due to the fact that the cows do not eat nearly all of the feed, as much of it is tramped down. Another objection is that many cows are lost in pasturing, through the bloat, a thing that seldom happens when green alfalfa is fed in corrals.

Of course you should not attempt to keep enough cows to consume all of the green feed that can be cut from your fields in the growing months, as that would not allow you to store any hay for winter feed. The common practice is to cure a part of every crop cut, and feed the balance in the above manner, and in this way you will have good feed the year round.—EDITOR.]

Hillcrest Stock Farm

THORNTON S. GLIDE, Prop., DAVIS, CAL.

"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

Breeder of

Short-Horn Cattle, Shropshire and Merino Sheep

Offers for Season of 1914 an exceptionally fine lot of Pure-bred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.

CHOICE CHEAP CONCENTRATED

MODESTO ALFALFA MEAL

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CATTLE POULTRY SWINE

For Prices See or Write

THE GRANGE CO., Modesto, Cal.

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

50 COWS AVERAGE 717 POUNDS BUTTER.

This is the average of the 50 cows that have completed yearly semi-official tests to date, in our herd, and only 15 at mature age.

Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.

INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as $150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention.

A. W. MORRIS & SONS CORPORATION, Holstein-Friesian Cattle. Woodland, Cal.

Don Adonis of Linda Vista.

BERKSHIRES—GUERNSEYS

Our BERKSHIRES are the finest in the State. At the last State Fair we entered in fourteen classes and won ten firsts.

Stock of all ages for sale.

GUERNSEYS—we offer for sale bull calves of A. R. breeding on both sides. Some by Don Adonis of Linda Vista, whose dam, two grand dams, and two great grand dams have an average record of 714 pounds butter-fat in one year.

GRAPEWILD FARM, A. B. HUMPHRY, Owner, Mayhews, Cal.

Barley for Pigs.

To the Editor: In a recent issue I noticed the statement made that hogs fed entirely on barley had made gains of 100 pounds for each 418 pounds fed. Is that correct? Can young pigs be successfully raised on a ration composed entirely of barley from the time that they are weaned? We have no alfalfa.—W. W. M., Maine Prairie.

ANSWERED BY PROF. J. I. THOMPSON.

Approximately 425 pounds of barley are necessary for 100 pounds of gain, on hogs from weaning time up to market weight. The last hundred pounds up to this time will undoubtedly take more grain than this, if nothing but the grain is fed, but the earlier gains are enough more economical to keep the average down to that amount.

Whether or not it is profitable to raise pigs in a small pen, fed on barley alone, will depend pretty much on the price of barley. If the above amount cost as much as 1½c per pound you can see where, at the average prices of hogs, there would be little or no profit. It is much more economical if some green feed can be fed in addition. We have not yet summarized the cost of the experiment where for one lot of hogs we cut the alfalfa green and brought it to them, while the others were allow to run on pasture, but the gains were practically the same and the amount of the grain was exactly the same. This would rather indicate that for market hogs, practically as cheap gains can be made by cutting the green feed and bringing it to them. This green feed does not necessarily need to be alfalfa, but might be vetch, rape, field peas, or some similar food.

We begin feeding some barley with equal parts of shorts as soon as the pigs are old enough to eat. A pig after weaning can oftentimes eat as much as 5 per cent of his body weight in grain. This would mean that a 50-pound pig would consume about 2½ pounds per day. A pig weighing 200 pounds or more is not liable to eat over 2 per cent of his weight daily for a long period, although pigs of this weight can oftentimes eat 6 or 6½ pounds of barley per day if nothing else is fed in addition.

University Farm, Davis.

POLAND CHINA IMPORTATIONS AND FUTURITY SHOWS.

To the Editor: It seems that we here in California should be able to hold Poland China futurity shows. It would be a fine thing to create an interest in the pure-blood hog business. It is too late to hold one this year but not too early to advocate the holding of one next year. The number of hogs will double in the next two years in California and we should keep up the blood lines, as there is good money in good hogs, with quick returns, and very little money in scrub stock of any kind.

I recently bought four hogs, of J. M. Kemp, Kenney, Ills. Mr. Kemp is the president of the American Poland China Record Association, and as good a judge of Poland Chinas as any one in the United States. The two boars and two sows are all of one breeding, recorded as follows: Boards, Youngs On The Dot, 216283, and On's Perfection 216285; sows, Darkness of Fairview 504608, and On's Darkness 504610. These hogs, Mr. Kemp says, are good enough to go in any company, even the Panama-Pacific Fair, with a good show of winning. They certainly are as royally bred as they make them. There are seven champions in the breeding not very far back.

I also purchased a young male of Pfander and son of Iowa, that was sired by old A. Wonder, the boar that the large type breeder's all take their hats off to, and out of a Giantess sow, that will be heard from later, if nothing happens to him.

This lot, and those that I bought of Winn, together with the first prize gilts at Sacramento, last year, should put me in the hog business in good shape.—W. A. YOUNG, Lodi.

[We see no reason why the breeders of swine in California could not profitably hold futurity shows, the same as the California Jersey breeders are expecting to hold from now on. In the East the futurity show is meeting with great success, among all classes of live stock. We should be pleased to have other breeders' views on the subject.—EDITOR.]

GREEN SCUM IN TANKS.

[Written for the PACIFIC RURAL PRESS by W. D. GUTHRIE.]

That our stock may have clean, wholesome water to drink, we should see that our watering troughs and tanks are kept clean. Ordinarily, scrubbing out every two weeks will keep them in good shape.

The thing that makes the tanks the filthiest is the green scum. It grows wherever water stand or moves slowly. Thus we find it growing in the basins around artesian wells.

Green scum is really a low kind of water-plant and may be readily killed by dissolving in the water of the tank or basin copper sulphate or blue vitriol in the proportion of one ounce to every 750 gallons of water. Copper sulphate used in the proportions mentioned will not injure stock of any kind; neither is it injurious to human beings.

Unslaked lime has also proved a good medium by which the troublesome green scum may be removed. One quart of unslaked lime to every 500 gallons of water has been used with success. Lime-water is very beneficial to the stock.

Wm. Bond, of Newark, paid this office a visit last week at which time he informed us that he will hold a dispersion sale of his registered Shorthorn cattle and Percheron horses during the latter part of August. Mr. Bond has spent many years in carefully breeding up these herds and states that he expects the stock to meet with a heavy demand by stockmen generally, throughout the State.

HOWARD CATTLE COMPANY
BREEDERS AND IMPORTERS OF SHORT-HORN CATTLE.
55 New Montgomery Street, San Francisco.

Quality Berkshires
Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.
You may buy cheaper Berkshires than ours, but you will not get better ones.
Oak Grove Dairy Farm
Woodland, California

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

DAIRY CATTLE.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

REGISTERED AND GRADE HOLSTEIN BULLS, from one to eighteen months old. Herd headed by Hartog Pontiac 48823-Rowena Maid Mutual 46304. Address Superintendent Whittier State School, Whittier, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warder herd bulls, both sired by $17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

30 HEAD imported registered Ayrshire Dairy Cattle, young healthy stock, cows now being milked, F. H. Howell, Pittsburg, Cal.

STRATFORD DAIRY FARM will sell 80 acres good alfalfa land or trade for registered Holsteins. T. J. Gilkerson, Lemoore, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars, J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

HOLSTEINS — Registered exclusively, Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

REG. HOLSTEINS—Bull calves, Juliana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS — A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE — Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

SHIRE HORSES—Stallions, mares and colts of the best breeding, both imported and home-bred, for sale at reasonable prices. Henry Wheatly, Salvador Stock Farm, Napa.

SWINE.

REG. POLAND-CHINA PIGS for sale from our prize-winning stock—the prolific kind. Both LARGE AND MEDIUM TYPE. Either sex. Price $12.50 up. Guaranteed as represented or money refunded. W. A. Young, Lodi, Cal.

FOR SALE—Entire herd of Registered Duroc-Jersey swine; young boars and gilts, two to seven months. Also four fine brood sows, including first-prize sow at State Fair, 1913. All guaranteed to please. Write or call. H. S. Van Vlear, R. 2, Lodi, Cal.

REGISTERED BERKSHIRE BOARS FOR SALE—Excellent individuals of the best breeding; good feet and plenty of bone; ready for use; farmers' prices; mail orders guaranteed satisfactory. A. H. Brinton, Woodland.

BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

REGISTERED DUROC-JERSEYS — No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

REGISTERED POLAND-CHINA SWINE —Prize winners, finest stock in State. $30 p. M. Bassett, Hanford.

DUROCS from first-prize winners State Fair, $15.00 up. Ed E. Johnson, Turlock, Cal.

REGISTERED O. I. C. SWINE—All from premium stock. C. D. Conway, Lakeport, Cal.

MULEFOOT HOGS are best by any test. Jno. Dunlap, Box 416, Williamsport, Ohio.

TAMWORTHS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

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ALFALFA VS. GRAIN HAY FOR DAIRY COWS.

To the Editor: I would like to know if alfalfa hay has a greater feed value for milch cows than grain hay? This year grain hay is so cheap that it would be about the same cost to me as alfalfa, as the alfalfa hay must be shipped here. Does alfalfa hay require a rough stock hay to be fed with it? I feed as a mash food, rolled barley, bran with some linseed meal. Now I can buy volunteer hay for $6 a ton while alfalfa will cost me $8 per ton. Which to your idea would be the better?—H. W., Sonoma.

ANSWERED BY PROF. F. W. WOLL.

Alfalfa hay is the better hay to buy and feed to dairy cows at prices given; first, because it will furnish more valuable food materials per ton than will oat or barley hay, and second, because cows relish it better and would be likely to give a larger flow of milk on it than on grain hay, pound for pound.

A liberal supply of flesh-forming substances (protein) is a matter of importance in feeding dairy cows; a ton of alfalfa will furnish 210 lbs. of digestible protein, against 114 lbs. in a ton of barley hay, and 94 lbs. in a ton of oat hay. At the same time the amounts of other digestible components contained in alfalfa are as high or higher than grain hay.

With the concentrates fed the cows there will be a further advantage in feeding alfalfa, in that the high-priced linseed meal can be replaced by rolled barley or bran, or a mixture of these. The cows need not be fed as much concentrated feed with alfalfa, if this is of good quality, as with the grain hay, and in the case given the allowance of concentrates may be reduced to three to six pounds per head daily, according to the production of the cows, provided the quality of the alfalfa hay is fairly good. The more hay the cows eat, at the price given, the cheaper the ration will be, for a good grade of alfalfa hay is worth one-half as much as concentrates, weight for weight, in feeding dairy cows, and concentrates are worth considerably over $16 a ton, even the cheapest of them. Barley is an excellent food for dairy cows fed alfalfa hay, and a mixture of barley, and middlings, in the proportion of three to one by weight, will give better results and prove cheaper than either barley alone, or barley and wheat bran, with alfalfa as sole roughage.

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VETERINARY QUESTIONS.

[Answered by Dr. E. J. Creely, San Francisco Veterinary College.]

TREATMENT FOR BULL.

To the Editor: I have a 2½-year-old bull who seems to have run out. He has served some cows three or four times, but does not get them with calf. Can anything be done for him? Would absolute rest or any kind of feeding bring him back?—J. H. R., Ripon.

Treatment seems of little use. I would recommend rest, good feed, and isolation for several weeks. Such animals are very expensive to keep.

CANCER OR LUMPY JAW.

To the Editor: I have a cow that has a small bonelike growth on her lower jaw. Seems more like hard gristle and a little tender. The growth is not lengthwise of the jawbone, but sticks straight out, one-half or three-quarters of an inch in diameter. If you know what it is, please give remedy.—Subscriber, Lompoc.

This may be a boal cancer or it may be lumpy jaw. I would recommend the iodine treatment if it is lumpy jaw.

COWS AND MORNING GLORY.

To the Editor: Kindly tell me through your Press if morning-glory is injurious to a milk cow.—W. S. M., Concord.

[We have never seen nor heard anything which indicated that it is. What are readers observations?—Editor.]

"People turn pale when they faint, don't they?" asked a lawyer who was severely cross-examining and badgering a witness.

"No, not always."

"Did you ever hear of a case of fainting where the party did not turn pale?"

"Yes, sir."

"Did you ever see such a case?"

"Yes, sir."

"When?"

"About a year ago."

"Who was it?"

"'Twas a negro, sir."

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Pets for Pleasure and Profit.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Wisdom is the main thing in raising children, and so few parents use it in the important and critical times of their children's lives that one almost wonders if it is not an obsolete principle in these days.

The wise parent will begin in early youth to cultivate a love of pets in children that are to be raised on the farm. Certain religious men say, "Give me the child until he is ten years old, then you may have him." These men are wise; they know that first impressions on the plastic mind of children are lasting and are never entirely lost, no matter under what conditions of life the child is put in. So in youth is the time to sow the seed for this love of pets that will have the power, if rightly cultivated, to hold the boys and girls to farm life.

Guinea pigs or rabbits can be left for the boys in suburban or village homes to raise; they do not need much room, and under sanitary conditions can be kept in very small places. But the farm boy and girl who can have more room and feed will want something that enjoys and does well under those conditions. I know one boy that makes money, and what is better is in the making of an enthusiastic horticulturist for the good of the State, by practicing on a few bulbs and plants his mother gave him to plant in a small patch of ground. If he keeps on he may be another Burbank, for he has a dozen colors of flowers now from his first start. And when visitors come to the farm, they are shown the experimental grounds of the boy and generally leave him an order for a few bulbs or plants.

BANTAMS FOR PLEASURE AND PROFIT.—Another thing the farm boy can do well, if the taste is cultivated early, is to raise bantams. These little pets require shade and care, but they more than pay for both in pleasure and profit.

Unlike most chickens, bantams love to be petted, it is natural to them, and they will follow a person who pets them, eat from their hands, jump on their shoulder, and do lots of little stunts if trained to it. In the old days bantams were just "banties," there being no particular attention paid to them until Sir John Seabright originated his two beautiful varieties, the Silver and Golden Seabright. Then others began to pay attention, until now there are almost as many varieties of bantams as there are larger breeds. Then, too, the shows have helped to interest people in these little pets, but so far the shows have not done justice to them, for while charging the same entry fee, at many of the shows they exclude them from the cups and prize money. To me this smacks of injustice, though it is all right if the entry fee is in proportion to the awards offered.

A good many business men take up bantams as a means of relaxation, and enjoy them beyond all comparison of cost of feeding and housing.

NOT HARD TO RAISE.—There appears to be a very general idea that bantams are hard to raise, but they are not so at all. The two chief requirements for successful raising of bantams are warmth and cleanliness. They must be kept free from lice, or the little things will die sure. Some advise greasing the chicks' heads as soon as hatched, but that is entirely wrong. If the chicks are to be raised with bantam hens, or any small hen, care must be taken that she is strictly clean to begin with, then keep her clean by dusting once a week. It is a good plan to dip a hen, if in any doubt about her being clean; dipping gets everything, while some odd ones may get away from powder. If the hen is dipped, it is safer to use either Kreso Dip No. 1 or a tablespoonful of Creolin to a gallon of warm water will answer. This dip does not discolor the plumage, even of white birds, and is a sure cure for lice, mites, and ticks. Another thing is that bantam eggs should never be given to a big heavy hen to incubate; choose a small quiet hen and see that she is clean and that the nest is clean and well ventilated, then you need not fear but the fertile eggs will hatch. The chicks can be raised by hand better than with hens really, and you get vastly more pleasure from them. If you accustom them to one place to nest, they can be turned out during the day and will come home to roost as sure as they live, but it is safer to train them first to pick around where you want them to stay. If there is a row of cabbage plants near, they will run under the plants without doing a bit of mischief, keeping off the plant lice and growing fat on them.

BREEDING YARDS.—In mating up always use the strongest and most vigorous males and do not try to get them too small, for many of the breeds lose their shape or type when bred too small. August is a good month for hatching bantams for show purposes, as they will keep the color better than those hatched in the spring months.

Feed just like you would other chicks, with the exception of corn, as they take on fat readily. Corn should be avoided until they have attained size.

During the hot days both old and young stock should be provided with shade, either natural or artificial. A few rows of sunflowers, or even garden vegetables, will shelter bantams, for they love to go along and pick off the insects, and they do it so quietly you never know where they are unless you call them.

Questions and Answers.

To the Editor: I have a flock of Barred Rocks that have been healthy until this summer. They seem to get very thin and light all at once and then die suddenly. We fed Kaffir corn till lately, now I give them a bran mash twice a day.—P. W., Exeter.

Whenever you have a case of a hen going light all at once and dying, there should be an investigation right then. Your feed is certainly light enough to cause the hens to go light. A bran mash twice a day, or even Kaffir corn, unless the hens had a good grass range, is not sufficient for hens—there must be more of a variety. Both of these feeds are good of themselves, but it is too narrow a diet to preserve health and strength. The symptoms you give point to tuberculosis. If I were you I would make a post-mortem examination of the next hen that dies and see what condition the lungs are in. It may be just plain poverty that ails your birds, and the remedy would be to clean up all dirty litter and improve the diet by adding some grain and a little beef scrap and barley meal to the bran mash. Also give them one teaspoonful, in a quart of mash moistened but not wet, of the following tonic: Iron sulphate, 1 ounce; calcium phosphate, 8 ounces; fenugreek, 4 ounces; black pepper, 2 ounces; table salt, 1 ounce; ground gentian root, 2 ounces. Mix all the powders together dry, and feed in mash as directed. All fowls that die of anything so suspicious as "going light" should be cremated, not buried. And all droppings should be carried far enough away from the others to insure safety and mixed with the earth. After everything is cleared up, spray the runs with sulphuric acid disinfectant and keep clean.

POULTRY TICKS.—An inquiry for a remedy for poultry ticks was answered by mail, as the case was urgent, but in order that others may know what to do it is given here. To clean the houses and ground of ticks requires a good strong disinfectant and the will to use it. Kreso Dip No. 1, obtained either at feed or drug stores, and used strong will do the work. Or take one quart of crude carbolic acid to three gallons of crude oil, and spray every crack and crevice of the buildings, under the sills and in the ground around them, if you have to turn the buildings over to do it. Then dip the hens in a solution of Kreso Dip No. 1 and warm water, or take Creolin and use a tablespoonful to the gallon and dip the hens over head, see that the feathers are well soaked, then set them out in the sun to dry. Grease the ends of the perches and underneath with tallow and beeswax—or grafting wax will do. This is to prevent the ticks from crawling onto the hens again if any survive. A soft grafting wax is fine, but it must be soft or they can crawl over it.

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The Home Circle.

SECRETS OF SUCCESS IN CANNING.

[By J. P. Zavalla of Berkeley, at the Fruit Growers' Convention at the University Farm.]

In general the heavy losses that sometimes occur in a canning plant are due to the fact that the different manipulations involved in the process of canning are improperly performed.

The operations of canning as performed at home are in all cases easier than those employed in a large plant. Nevertheless it sometimes happens that canning at home becomes a little difficult and consequently the damage of the home canned goods soon takes place. If we analyze the different factors that intervene in the decomposition of canned fruits and vegetables we will find that the most important are as follows:

1. Use of unfit raw material.
2. Use of unfit cans and glass jars.
3. Carelessness in the matter of cleanness.
4. Over-filling of the cans.
5. Carelessness in the matter of sealing the cans.
6. Carelessness in the matter of cooking the cans.

These factors will be discussed in an ample and simple manner so to give a clear understanding of the influence that they exert in the canning industry.

By unfit raw material we mean those fruits or vegetables which due to one reason or another are partially decomposed. The decomposition of fruits and vegetables is due to the action of very small organisms which can be classed into three groups:

a. Molds.
b. Yeasts.
c. Bacteria.

The effects of these organisms upon the fruits and vegetables become more noticeable when the surrounding temperature conditions favor their growth, and also when the decayed portions are allowed to remain in contact with the sound raw material.

These facts considered in their true value would be sufficient to prove the necessity of making a very careful selection of the raw material before it is canned. This operation is very simple, and it certainly pays to have it done as well as possible, for it will help the canner a great deal in obtaining a better looking product and also of long keeping qualities. An operation that should be always performed is the blanching of the raw material before it is delivered to the canner. In this way we will greatly improve the appearance of the finished product. The blanching can be done by using a tank filled with hot water or any other thing fitted for that purpose, in which the raw material should be submerged for a few minutes with the aid of a basket.

The use of unfit cans and glass jars is a point which every canner must give a great deal of attention.

The making of tin cans has improved right along since the beginning up to the present time, and as a result of this improvement we find that one of the greatest achievements of the industry is the making of sanitary enameled cans.

The reason why these cans are called sanitary is no other than that of the use of a very small amount of lead in the sealing operations. The advantages of this method of making cans may not be doubted. The danger of poisoning effects due to the action of salts of lead has been minimized to such an extent that now it is of little consequence.

The inspection of the cans before they are sealed is an operation which by no means should be neglected. The time is coming when the machinery used for making the cans will reach such a high state of perfection in the matter of seaming that no allowances will be necessary for leaks due to imperfection on the side seaming of the cans. But as long as this matter remains to be solved the inspection of the cans to which we referred in a previous paragraph should be accomplished before the cans are filled with fruit if saving of money and time is the aim of the canner. The glass jars used in canning should be in all cases free of cracks which in time will break due to lack of care in the matter of handling them or to differences in temperature. The rubbers should be new and caps should be sound and well fitting.

One of the most important features of the different steps involved in the operations of canning is that of the hygenic conditions under which the canning of fruits and vegetables is accomplished. The raw material after it is cut in pieces for instance has to be thoroughly washed. In this way we will secure a better looking product especially when glass jars are used. Besides this by using water of good quality in the operation of washing the fruit before it is canned, the number of organisms that usually come in contact with the raw material will be decreased thereby facilitating the preservation of the fruit. Fruit that drops on the floor should never be put in cans before it is washed. The cans and glass jars before being filled with fruit should be carefully washed. The tables used for cutting the fruit, and also all the outfit used in the operations of canning should be kept as clean as possible.

The cans and glass jars should be filled with fruit in such a way as to leave plenty of room for the syrup and also to facilitate the sealing of them. If the cans are over-filled the operations of capping are made difficult especially when it is done by hand. Besides this, the danger of putting the fruit in contact with the acid and solder used for sealing is increased.

The operation of sealing the cans is an important one, and the canner should take plenty of time to secure a good sealing. When the sealing of the cans is done by hand it requires the aid of experienced hands. Otherwise small openings may be left and therefore the action of the sterilizing bath will be of a little value.

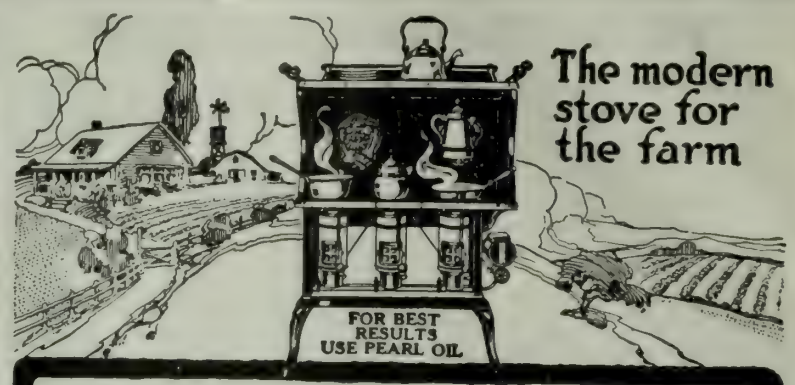
The last step in the canning operations is the cooking of the raw material. This operation can be considered as one of the most valuable features of this industry. If the sterilizing process is neglected the whole season's pack will be lost, no matter how careful the preceding operations have been accomplished. In order to facilitate the cooking of the fruit it is necessary to have it classified according to degree of ripeness. If this operation is carefully done, much of troubles connected with the cooking are reduced to a minimum. The water used for cooking should always be kept at the boiling point. The length of time that the raw material should be cooked depends on the nature of the raw material itself.

It is a very difficult proposition to try to state definite figures to be used in the process of cooking, for the simple reason that they vary from one day to another. Then the best way to be followed in order to ascertain the right time of cooking is by making several tests during the day's run.

The heat penetrability while cooking the fruit varies with the kind of fruits used, with the length of time, with the temperature of the cooking bath and finally with the concentration of the syrup. By heat penetrability is meant the time required to register at the center of the can the surrounding temperature. The higher the temperature registered at the center of the can after certain period of cooking the less the danger of getting spoiled cans after this operation is done. One of the best ways to follow in order to know when the fruit is thoroughly cooked is by testing the pieces contained in a can. If they show the same appearance in color and also the same degree of hardness it will prove that they have received the right time of cooking. If the fruit has been cooked during thirteen minutes and its appearance does not show any sign of damage due to an excess of cooking it would be advisable to prolong the cooking two or three minutes more, providing this increase in the time of cooking would do no harm to the product. In this way the probability of getting swelled cans due to under processing will be less and financial results therefore better.

The previous discussion deals with the practical methods of minimizing spoilage. A few words regarding the "germs" that cause spoilage after canning may be of interest.

Later Troubles.—In general organisms that occur in spoiled cans of fruits differ from those in spoiled cans of vegetables by being more easily killed by heating. The organisms in spoiled fruit are principally yeasts and molds all killed below the temperature of boiling water. Those in swelled cans of peas, asparagus, etc., are usually of types of bacteria killed above the boiling point of water and hence require heating under steam pressure. Their resistance is due to



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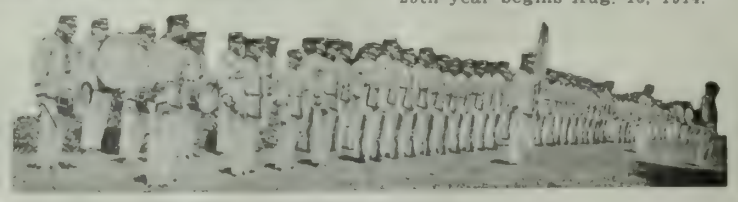

formation of bacterial spores or "seeds" which are very hard to kill. If these are in the cans or on the vegetables, etc., they will multiply in the cans and spoil the vegetables it the temperature has been insufficient or the time too short.

Fruits contain a great deal of fruit acids that aid in sterilization or killing the germs by heat, vegetables are usually almost free from appreciable amounts of acid making sterilization for this reason difficult.

These facts explain why it is necessary to use extra precautions in sterilizing vegetables and why fruits are easily sterilized. It also explains why spoilage of fruit is usually due to leaks through which yeasts, etc., gain entrance while swelling is often due not to leaks, but to growth of bacteria that were sealed up in the cans and survived cooking.

In sterilizing fruit then, one of the principal aims of cooking will be simply to render the fruit palatable and of the proper texture; if this is accomplished at the boiling temperature the yeasts, molds and bacteria on the fruit will be killed. If spoilage then results it means defective and leaky containers. Vegetables on the other hand because of the resistant bacteria spores, must be cooked under pressure, not with the idea of cooking or rendering them palatable, primarily but with the idea of killing the bacteria that cause swelling, and souring. If pressure cookers are not available for vegetables, repeated sterilization at 212°, the boiling point of water may be used; that is three heatings on three successive days.

The time between each heating allows the bacterial spores to sprout and when young they are very easily killed. Hence if the spores have survived the first heating they will sprout between the first and second heating or second and third, and can then be killed at 212°.

By way of summary it may be stated spoilage is due chiefly to the action of "germs" or small living organisms that decompose the canned goods. Their activity is favored by the following factors: six defects mentioned at the opening of this paper. The methods of keeping down spoilage consist in avoiding or controlling the above conditions.

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Our Young Folks

Alma's Picnic.

Alma had never been on a picnic, picnics not being the fashion in her part of the town. But, when she wandered up to the other part that morning, and saw the four-horse wagon hitched in the public square, its bottom covered with hay and the horses gayly bedecked, she knew perfectly what it meant. She had seen such wagons go by her door on other holiday mornings, crowded with laughing girls and boys bound for the Cool Spring Woods, three miles out of town.

She had never been to Cool Spring Woods either, but she fancied that, from its name, it must be a very attractive place indeed. Town today was very hot and stuffy, and she could almost hear the Cool Spring gurgling in her ears. She was hungry, too,—Alma was generally hungry,—and the smaller vehicle tied near the wagon was stacked with tempting buckets. Moreover, she was lonely; for her companions down town were for the most part so rough that she was a little afraid of them, and kept to herself.

The fat black horses shook their heads, fluttering bright little flags and tinkling silvery little bells. "I'll climb in, a minute," Alma said to herself, "and make believe I'm going, too."

She clambered cautiously over the wheel and sank into the fragrant straw. Back under the driver's place there was a safe little retreat, where a linen buggy-robe hanging from the seat made a sort of curtained cubbyhole hidden entirely from the rest of the wagon. "I'll crawl back there," said Alma, "where nobody can look in and laugh at me."

She dropped the curtain and curled herself into a comfortable position, her eyes on a level with a crack, so that she might watch the street ahead, up which the party would come. "I can see them in plenty of time to get out," she decided.

For a long time she stayed under the seat, happy and content, pretending that she wore a trim gingham, and shoes and stockings, instead of her own shabby array, and fancying herself bound for Cool Spring, bag and baggage. But it was very warm indeed in the wagon, especially that part of it, and after a time the wide-open eyes glued to the crack began to droop slowly, the tousled head sank lower and lower, and presently Alma was asleep.

She waked with a violent start. The horse-bells were tinkling briskly, and all about her were voices laughing and chatting. The children had come before she knew it!

Poor little Alma had never been in such a state in all her timid, quiet lifetime. Should she move, or should she stay where she was? And, while she was trying, with wildly beating heart, to make up her mind, the wheels began to turn, the harness creaked, and they were off. Laughing, cheering, rollicking, the jolly crowd rolled down Main Street, faces set toward the country. When they passed her father's house, Alma wondered what the family would think to see her tucked away, hidden, among the well-dressed crew. She knew she would not be missed, for the home people would think her in the park, where she often spent the day with a apple or a biscuit for lunch. Oh to be in the Park now! For what would these young people say and do when they discovered her, a shabby, shrinking, uninvited guest?

It seemed ages that she lay there, cramped and miserable while her companions in the wagon made themselves merry. But at last the suspense came to an end.

"What's under the seat?" a voice asked. "Good thing, I know, without looking. Find out, Bob—you're nearest!"

Then a face peered suddenly around the corner of a lap-robe and blinked into Alma's scared eyes. "Why, it isn't either," cried the owner of the face, "it's—it's a girl!" He lifted the robe and showed them the frightened child. It seemed to Alma she was looking into a hundred pairs of eyes. She shut her own, quickly, and pushed farther back into her prison.

"Why, the poor little thing!" exclaimed a sweet girl-voice. "Miss Hale, do look at this child wedged under the front seat!"

One or two giggled, and the boy who had made the discovery stared hard; but Miss Hale leaned forward and put a gentle hand on the small shoulder. "Come out, dear, in the cool air," she said, "and tell us about it."

When Alma's shy story ended, there was no more giggling. Each one, in his or her way, began to make the little stranger feel at ease, crowding closer to give her room, and smiling into her bashful eyes.

That was a wonderful day that followed! The cool spring in the dark green woods was cooler and more crystal than Alma had dreamed: flowers and mosses and ferns grew as thick as in fairyland, and the marvel was you have them for the picking. There were delightful games, and long swings hung from tall trees; and a little past noon Miss Hale spread white cloths on a flat table-rock, and such a feast as Alma had never imagined was served the happy frolickers.

That evening at sunset, when the horses drew up before an humble gate, their flags and bells still merry, a radiant child was helped down into a puzzled woman's arms; and, as the little traveler waved good-bye with her hands full of flowers, a chorus arose from the wagon.

"We'll see you again!" they cried. "And will you go with us next year, too, Alma?"

"Mother," said Alma, when the last last word of the beautiful tale had been told, "count up for me, please, how many minutes it will be before next Fourth of July!"—N. B. Turner, in Sunday School Times.

"Mary," said her little brother at the breakfast table, "did Mr. Evans take any of the umbrellas or hats from the rack when he was going home last night?"

"Why, of course not, Jack," replied Mary, with a laugh. "Why should he?"

"That's just why I'd like to know," said Jack. "Because when he went out I heard him say, 'I'm going to steal just one,' and—why, what's the matter, Mary?"

A dish of water placed in a hot oven where pies, cakes or puddings are being baked will prevent them from scorching.

Why is a game of ball like a buckwheat cake? Because its success depends very largely upon the batter.

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PREPARE AT
WESTERN NORMAL
STOCKTON, CAL.

THE MARKETS.

San Francisco, July 1, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The local grain market is in a holiday condition at present, no large business having been done during the week, though there is about the usual jobbing movement. The northern market has quieted down, owing to an easy feeling in other quarters, though considerable new grain has been contracted.

California Club, ctl	$1.57½@1.62½
Forty-fold	1.60 @1.65
Northern Club	1.57½@1.62½
Northern Bluestem	1.62½@1.65
Northern Red	1.52½@1.60

BARLEY.

There has been a little brewing barley sold, but values for shipping grain are still rather uncertain, though there is a large quantity to be shipped in the near future, and charter rates are low. Business here is dull at the moment, with ample supplies.

Brewing and Shipping	$1.00 @1.02½
Choice Feed, per ctl	$0.92½@0.97½
Common Feed	Nominal

OATS.

The only change is a slight decline in white oats, owing to a slight increase in offerings, with a light demand. Some off grade reds are offered at lower prices, but receive little attention.

Red Feed	$1.10 @1.20
Gray	Nominal
White	1.25 @1.30
Black Seed	Nominal

CORN.

Egyptian is moving slowly, and is quoted a little lower, as some holders are getting anxious to sell. Other lines are unchanged, spot offerings of eastern being light.

California Yellow	Nominal
Eastern Yellow	$1.80 @1.85
Eastern White	Nominal
Egyptian	1.80 @1.85
Milo Maize	1.80 @1.85

RYE.

Some rye of desirable quality has come in, and is held at somewhat higher prices, though there is not much demand, and off-grade stock is obtainable at about the old figures.

Rye, per ctl.	$1.50 @1.60

BEANS.

There is not much feature to the local bean market at present. Large offerings are well cleaned up, and most of the stock has been shipped out, leaving only scattered lots to be disposed of, and these are gradually moving off under a steady demand. Prices are unchanged, and it is not expected that there will be much fluctuation until the new crop is ready. The general crop outlook is still rather uncertain, but lima and blackeye prospects are considered good, though the probable supply for the coming year promises to be below the normal demand, and good prices are expected.

(On wharf.)

Bayos: Cal., per ctl	$7.00 @7.50
Mexican	4.50 @5.00
Blackeyes	7.75 @8.00
Cranberry Beans	4.25 @6.00
Horse Beans	1.90 @2.15
Small Whites	5.00 @5.25
Large Whites	3.90 @4.50
Limas	6.50 @6.85
Pea	4.25 @4.50
Pink	3.75 @4.00
Red Kidneys	Nominal
Mexican Red	6.00 @6.25

SEEDS.

There is no feature to the seed business, the quoted lines being very quiet, with values in several lines little more than nominal.

Alfalfa	12½@15 c
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	2½@ 3 c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Values are steadily maintained on the old basis, the demand everywhere being rather light.

Cal. Family Extras	$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

Arrivals have again increased, and larger shipments are expected from now on, as the movement of the new hay has begun. Otherwise, conditions show little change. Buyers refuse to take much interest, the consuming trade being averse to putting in large stocks, and it is very hard to clean up the arrivals. Growers have been refusing to accept the figures now offered in the country, but there is more disposition to sell than before, and increased offerings may bring the market to a still lower level. Second cutting alfalfa is beginning to arrive, but finds only a limited demand, as buyers are not ready to put in large stocks.

No. 1 Wheat, or Wheat and Oats	$11.00@12.00
do No. 2	9.00@11.00
New Crop	7.50@10.00
Lower grades	8.00@ 9.00
Tame Oats	8.00@12.00
Wild Oats	6.00@ 8.50
Alfalfa	6.00@ 9.50
Stock Hay	5.00@ 6.00
Straw, per bale	40@ 50c

FEEDSTUFFS.

All lines of feed remain fairly steady at the old prices. Business is comparatively quiet, but in most lines offerings are not large enough to cause any perceptible weakness.

Alfalfa Meal, per ton	$17.00@18.00
Bran, per ton	25.00@26.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	26.00@27.00
Cracked Corn	41.00@42.00
Middlings	32.00@34.00
Rolled Barley	21.50@22.00
Rolled Oats	28.00@29.00
Shorts	26.00@27.00

Garden Truck.

VEGETABLES.

Several lines of summer garden truck are coming in more freely, and clean up slowly, though there is a good demand. Tomatoes in particular have weakened, as Delta stock is now fairly plentiful, and the southern offerings clean up slowly. Cucumbers and green corn also have taken a sharp drop, and asparagus shows antoher slight decline, as there is more pressure on the market since many canneries have finished their run on this vegetable. Green peas, as well as string and wax beans, are a little lower, while green limas are rather firm. Green peppers also are a little stronger, though plenty of stock is coming in from the south. Other lines stand about as before.

Cabbage, per ctl	$ 1.00@ 1.25
Cauliflower, dozen	40@ 70c
Green Peppers, lb.	5@ 8c
Carrots, per sack	35@ 50c
Green Peas, lb.	2@ 3c
Tomatoes: Southern, crate	25@ 40c
Delta, lugs	1.00@ 1.50
Beans: Wax	2@ 3c
String	2@ 3c
Rhubarb, box	60c@ 1.00
Asparagus, box	75c@ 1.25
Cucumbers, box	50@ 75c
Eggplant, lb.	6@ 7c
Green corn, sack	75c@ 1.75
Lima beans, lb	5@ 6c

POTATOES AND ONIONS.

Everything under this head stands as last quoted, values being quite firmly maintained in most lines. Potatoes are coming into Stockton in large quantities, but heavy shipments are being made to the north, as well as the southwest, keeping the market pretty well cleaned up. Offerings of onions are increasing, but the market is decidedly strong, with a large eastern demand. Local buyers are said to be making contracts for Oregon onions.

Potatoes:	
River Burbanks	$ 1.00 @1.50
Garnets, lb.	1½@ 2c
New Potatoes, lb	1¼@ 1¾c
Oregon Burbanks	75c@$1.25
Sweet Potatoes, per ctl	2.50@ 2.75
Onions: Bermuda, crate	2.00@ 2.25
New Red, ctl	2.00@ 2.25
Garlic, new, per lb	5@ 8c

Dairy Produce.

POULTRY.

Eastern arrivals are light, and with a good demand for the holiday the market shows more strength than for several weeks. Values, however, are not quotably higher. Squabs are offered freely, with lower prices.

Large Broilers	18 @19 c
Small Broilers, per lb	18 @19 c
Fryers, per lb	20 c
Hens, extra, per lb	17 @18 c
Hens, large, per lb	17 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb	22 @23 c
Squabs, per doz.	1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	6.50@ 8.00

BUTTER.

Another week has passed without change in prices, though occasional large arrivals cause a temporary easiness. The demand, however, still keeps about even with the supply, and there is no indication of a change in the immediate future.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24	24	24	24	24	24
Prime Firsts	23	23	23	23	23	23
Firsts	23	23	23	23	23	23

EGGS.

The slight firmness noted during the last two weeks has disappeared, as offerings continue quite heavy, and the leading sellers find it necessary to maintain the demand by keeping prices down. Local trading is quite active at the present figures.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25	24½	24	24	24	24
Firsts	22½	22½	22½	22½	22½	22½
Selected Pullets	21½	21½	21	21	21	21

CHEESE.

Values stand as before on all lines, with fairly large offerings and an equally good demand.

Fancy California Flats, per lb	12½c
New Young Americas, fancy	14½c
Monterey Cheese	13½@14½c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras	27	27	25	25	25	25
Eggs	25	25	26	26	26	26
Cal. Cheese:						
Flats	12½	12½	12½	12½	12½	12½

Deciduous Fruit.

The local demand continues rather light, and the general range of prices continues to decline. The berry market is decidedly easy, all varieties showing some decline, with liberal offerings, and $3.50 is the outside figure for strawberries. Gravenstein apples have been added to the list, and astrachans are lower, nothing in this line being very active as yet. The cherry season is about over, and this fruit is no longer worth quoting, though some Oregon stock is offered at about 12c. per lb. Apricots are easier, as the ripening of the Alameda county crop is bringing in more liberal supplies. Pears are steady, with a little more demand, and peaches are a little firmer, while plums are lower. Both black and white figs are now offered freely, and there has been some difficulty in cleaning up the arrivals. Melons stand as before, and both lines are moving more freely, though watermelons are still too high for any heavy demand. A few early grapes are appearing, and attractive lots find ready sale at the appearing quotations.

Blackberries, chest	$ 2.50@ 4.00
Loganberries, chest	1.50@ 4.00
Raspberries, chest	4.00@ 6.00
Gooseberries, lb.	5@ 6c
Strawberries:	
Malindas, chest	2.00@ 3.50
Banner, chest	2.25@ 3.50
Longworth	2.50@ 3.50
Apples, New Crop:	
Astrakhans, box	50c@ 1.25
Alexanders	75c@ 1.25
Gravenstein	50c@ 1.50
Apricots, crate	65@ 80c
do lugs	1.00@ 1.25
Pears, box	50c@ 1.00
Peaches, crate	60@ 75c
do large	1.00@ 1.40
Plums, crate	40@ 65c
do lugs	50c@ 1.00
Figs, white, single layer	40@ 65c
Figs, Black, box	40@ 65c
Currants, chest	6.00@ 8.00
Cantaloupes, crate	1.25@ 1.50
Watermelons, lb.	1½@ 2¼c
Grapes, crate	1.25@ 1.75

Dried Fruits.

The only quotable change in the fruit line is the addition of new crop pears to the list. It is said that this fruit will be scarce, owing to the strong demand from shippers and canners. It is reported that some new apricots are being shipped, and that the crop is turning out a little better than was expected, though values are well maintained. Sales of dried nectarines are reported at 7c. A good many sales of peaches are reported at 4½c., though packers are picking up a few contracts at ½c. lower, and there is no present indication that satisfactory prices will be realized, the demand being still light. There has been considerable talk of the prune crop being above early estimates, but neither growers nor packers seem to doubt the ability of the market to absorb the crop at about the present prices. The demand has been a little slow, but growers in the leading districts are unwilling to make any concessions. Prices on old crop raisins for August-September delivery have been reduced a little, this being reflected in the price offered to growers, but new-crop prices have not been established. The New York Journal of Commerce says:

Buyers in this section continue to withhold interest from future California prunes, but there is no effort to force business being made by the packers. Although late advices indicate that the crop will not be as short as was thought earlier in the season, it will not be a large one by any means, and growers who still have fruit to sell are unwilling to accept bids of anything less than 5¾c. orchard run, while not a few of them are holding out for 6c. Spot prunes have a limited jobbing outlet.

Evap. Apples, 1914	Nominal
Apricots, 1914	9 @ 9½c
Figs: White, 1914	3¼c
Black	Nominal
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914	5¾@ 6½c
Peaches, old and new	4 @ 4½c
Pears	8 @ 9 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@ 4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

The Valencia markets of the East were seriously handicapped last week, by the continued heavy offerings of other varieties of oranges, the bulk of which stock showed decay and unmistakable signs of age. It is thought that there are still between 300 and 400 carloads of this stock to be marketed. Valencias that are arriving are of very fine quality, but with the markets loaded with cheap summer fruits as well as cheap oranges, there is difficulty in interesting the trade to any extent at this time in Valencias. The prospects for a good average crop of oranges in California during 1915 now seem assured, the cool weather of the past month having been especially favorable to the growing fruit.

Despite the fact that another hot spell has visited the Eastern states the markets are well supplied with lemons for the present. This is accounted for by the manner in which dealers loaded up on lemons during the recent hot spell, only to have cool weather return and leave them well supplied.

Carefully compiled figures show that over double the average supply, or 211,000 boxes, of foreign lemons are at present available. Estimates show that from the beginning of last week about 60 cars a day can be consumed in the Eastern markets.

The auction market in New York, June 29, was higher on all varieties, 25 cars of Valencias selling for an average of $1.60 to $3.50 and 15 cars of Navels selling for an average of $1.35 to $2.95. Lemons in this market were quoted at $2.75.

The market in Philadelphia, June 29, was advancing on Valencias which averaged $1.70 to $2.35. St Louis market steady on lemons on an average of $3.30 to $5.15.

There is a firmer feeling in apricots

for July-August shipment out of the new crop. Quotations f.o.b. Coast range from 10⅜c. to 10⅝c. basis, as to seller, on the three grades of Santa Clara fruit. In view of the admittedly large crop, buyers here look for a reaction in f.o.b. quotations and are in no hurry to cover their fall requirements. Peaches are dull, both on the spot and for future shipment. Prices are unchanged and nominal.

Local prices in the San Francisco market, in all lines of citrus fruits remain the same as last week. There is not much feature to the local trade, the demand for oranges being rather light, owing to the abundance of deciduous fruits, though other lines have been moving fairly well for the last week.

Oranges: Navels, box	$ 1.25@ 2.50
Valencias, box	1.75@ 2.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.50@ 2.50
Lemons, box	2.75@ 5.50
Limes, case	9.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing new in this line, as the official figures for almonds have not yet appeared. It is reported that the eastern trade is taking little interest, and is not disposed to pay the prices that were made on early purchases.

Almonds, 1914 crop:	
Nonpareils	17 c
I X L	16 c
Ne Plus Ultra	15 c
Drakes	13 c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

Local values are unchanged, but the market is rather easy, with only a limited demand. Shipments from the south are now moving forward rapidly, and appear to find a fair demand in other quarters.

Comb: White	12 @13 c
Amber	10 @11 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

Prices show a slight advance, as there is more demand than for some time past, and offerings are light at the moment.

Light	31 @32½c
Dark	30 c

HOPS.

Business continues quiet, as growers prefer to wait until crop conditions are better known before making further contracts. Buyers are said to be anxious to contract at 15c., but have not secured much stock lately.

1913 crop	15 @17½c
1914 crop	14 @15½c

Live Stock.

Another slight decline is noted in beef cattle, as shipments to this market are coming in a little more freely. Some cattle are also being shipped north. Dressed beef has also declined, while dressed mutton and lamb are higher.

Steers: No. 1	7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5¾@ 6 c
Bulls and Stags	3½@ 4½c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¾c
100 to 150 lbs	8½c
Prime Wethers	5¾@ 6 c
Ewes	4¾@ 5¼c
Milk Lambs	7 @ 7½c

DRESSED MEATS.

Steers	10½@11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	11½@12½c
Ewes	11 @11½c
Suckling Lambs	14½@15 c
Dressed Hogs	13½@14 c

WOOL.

The spring clip is now pretty well cleaned up all over the coast, a large lot of Oregon wool having been sold last week. Prices continue firm, with no sign of weakening in the Eastern market as yet.

San Joaquin	12@14c
Humboldt and Northern	16@21c
Calaveras	14@18c

HIDES.

Values are well maintained, in view of the absence of any large accumulations, the demand being only moderate but steady.

Heavy Steers, over 56 lbs.	15 @15½c
Medium	15 @15½c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb.	15 @15½c
Light Cows, 30 to 50 lb.	14½@15 c
Kip	15½@16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	25½@26½c
Dry Kip, 10 to 15	24½@25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

No further shipments of importance have appeared in the local market this week, and business at private sales is not especially active, though conditions as regards desirable stock are fairly encouraging. Only first class horses, ready to go to work, are wanted, and the demand is relatively stronger in the country than here. Values are pretty well maintained at the recent decline.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

SPECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., June 30, 1914.

The depressed condition of all eastern markets on deciduous fruits during the past week has been due to several causes, principally unsound financial conditions, arrival of over-ripe plums and a heavy supply of eastern berries and La Conte pears from the southern states.

Furthermore, the shipments from California this season to date exceed those of last year by a thousand cars. On account of the light supply of early peaches and the heavy supply of plums, desirable assortments were not possible in every case, and it soon became evident the plums were a glut on the market. There were few buyers, after the early cars arrived, who cared to take straight cars of plums. The season is more or less peculiar as the fruit is ripening out of season.

Bartlett pears have been moving in carlots for the last week, the first arrivals having just reached the eastern markets. At this writing Bartletts are being offered and readily bought at $2.75 to $2.85 delivered. It is not possible to estimate the Bartlett situation at present, but, on account of the fact that approximately 5000 tons have been sold to the canners, which will benefit the eastern shipments to a great extent, we look for a delivered average of from $2 to $2.25.

There has been a little activity in the peach deal insofar as Elbertas are concerned, buyers ordering for future deliveries. About 100 to 150 cars have been sold of the above variety at prices equal to the past two years. This, in the face of unsound conditions, indicates a little better tone to the market in the next two weeks.

Markets for the past week averaged as follows:

New York—Tragedy 75c@$1.90; Comet Pears, hf. boxes $1.14@1.60; Red June 60c@$1.20; Santa Rosa 60c@$1.60; Royal Cots 80c@$1.35; Climax 55c@$1.60; Burbank 60c@$1.25; Simoni 70c@$1.30; Triumph 66@94c; Hales 74@80c; Tilton Cots 83c; Alexander peaches 72c; Abundance $1; Botan 50@55c; Dewey 73c; Wickson $1.25@2; Wilder, hf. boxes, $1.10; hf. boxes Lawson, $1.14.

Chicago—Tragedy $1@1.65; Red June $1.05@1.30; Santa Rosa $1.18@1.33; Royal Cots 93c@$1.25; Climax 75c@$1.20; Burbank 80c@$1.15; Simoni 70@98c; Triumph 75c@$1.25; Hales 85c@$1.10; Alexander 87c; Abundance 78@91c; Botan 65@91c; Shiro 98c; Wickson 75@85c; Tilton cots 87c; St. John $1.30.

PUBLISHER'S DEPARTMENT.

HOLT PICNIC.—The first annual picnic given by the Holt Manufacturing company, to their 750 employees and families, June 27, at Stockton, was an event to be remembered by all who were fortunate enough to be able to attend. After parading through the streets to Oak Park, the amusement committee proved their capability by supplying suitable prizes for all kinds of athletic sports, from a jumping match to two baseball games. The evening was spent in listening to an interesting vaudeville program and in dancing. It was estimated that there were some 2000 present and it is likely that it will become an annual event in the future. The Holt company is to be complimented on the able manner in which the program was carried out.

This has been another big week in our book departments, the demand for Prof. Wickson's works showing no abatements. To far-away New Zealand a fair sized order for "California Fruits and How to Grow Them" went forward by steamer during the week, while several sacks full of "One Thousand Questions in California Agriculture Answered" helped to increase the volume of business done by Uncle Sam's parcels post department.

To overcome the enormous expense and great loss of time in digging potatoes in the old fashioned way, a new machine has been constructed, which it is claimed, will do this work automatically. It is proving a great success wherever introduced and very materially cuts down the expense of the potato grower, thereby largely increasing the profit. This machine is being introduced on the Pacific Coast by Arnott & Company of Los Angeles, who will send catalogues and particulars regarding free trial to any potato grower who may be interested.

Our subscription department is receiving valuable assistance from the efforts of many appreciative readers who have induced their neighbors to become subscribers to the RURAL PRESS, and we take this opportunity of heartily thanking those who have taken so much interest in their favorite weekly. Although several of our field men are taking a vacation, the above mentioned assistance enabled us to add 232 new names to our list.

The attention of our readers is directed to the announcement of the Whiting-Mead Commercial Co. on the back page of this issue. Low prices seem to rule on many articles required on the farm and we would recommend sending for the firm's free catalogue, which will give much more information than can be given in an advertisement.

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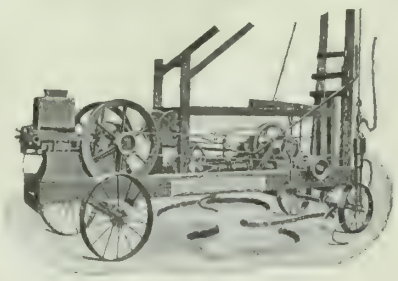
We Manufacture the Best Pumps for Every Purpose.



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Make sanitary house wells with heavy galvanized standard pipe casing, which excludes all surface seepage and alkali water. These wells cost less than common sheet iron wells with same size pumps. The tools are light to handle and drill fast. Ask for circular.

We also have large rigs for making sheet iron irrigation wells. All machines sold with or without engines. Write for catalogue and information blank.

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"California Vegetables" is handsomely printed, contains many cuts, has over 300 pages, and is bound in cloth. The contents cover every phase of vegetable growing, including farmers' gardens, California climate, vegetable soils, irrigation, drainage, cultivation, fertilization, protection, weeds, seed, growing, location and arrangement, planting season, propagation; also description and methods of handling all varieties of vegetables grown here.

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Ready Roofing Paper, including nails and cement sufficient for laying, per roll	$1.40
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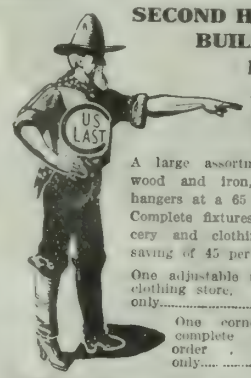
Also everything in Fittings, Supplies, Pipe, Vitrified Sewer Pipe, Basin Supplies, Bathroom Trimmings, Laundry Trays, in fact, everything in this line.



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One adjustable triple mirror for clothing store, only	$35.00
One corner cigar case, complete and in good order, only	$18.00

Machinery for a planing mill. A planer, a three side machine, a cut off and rip saw, and a framing machine at junk prices.

Office partition and equipment at a saving of 45 per cent.

Good 1-inch Boards, suitable for sheds, fences and rabbit huts, per M only	$12.00
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Good, second-hand 4-ft. plaster lath, only, per M	$2.00
Good, second-hand, well seasoned singles, per M	$1.50
Good, second-hand, 3-ft. pine pickets, per hundred	$1.50
All Screen Doors, 56c to $1.00, formerly $1.00 to $1.50. Second-hand Panel Doors	50c up
Glass Door	$1.25 up
Sash	35c up
Good Red Wood Boards, per M	$14.00
Old and No. 3 Finished Lumber, per M	$20.00
Sash Weights, per pound	1c

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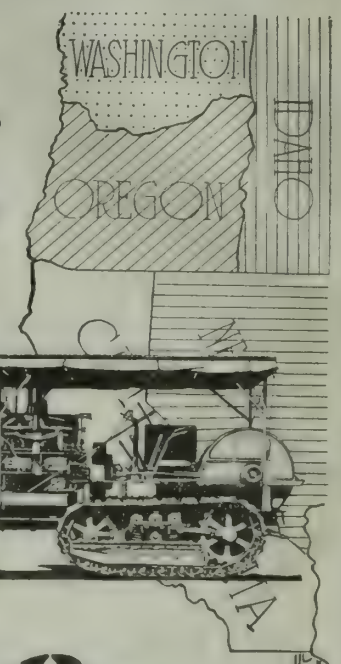
2/3 of all Tractors are Caterpillars



What better recommendation could any tractor have? Doesn't this one fact prove that the Caterpillar is a practical, all-round tractor—a tractor that has made good in the every-day work of hundreds of ranches? These buyers of tractors are demanding, and getting, the machine that delivers the most for their money.

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THE PACIFIC RURAL PRESS

Vol. LXXXVIII. No. 2. SAN FRANCISCO, SATURDAY, JULY 11, 1914. Forty-Fourth Y

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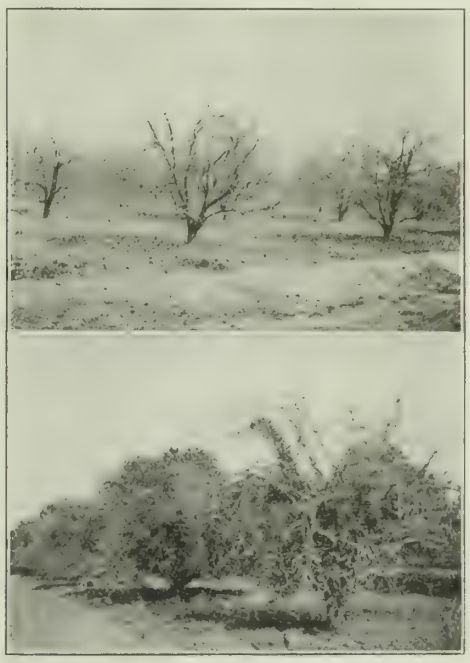
DELAYED CITRUS PRUNING SAVED TREES.

[Written for the Pacific Rural Press.]

"I couldn't have gotten a bushel basket of leaves from my 65 acres of orange trees in May after the freeze a year ago, but now I shake hands with myself in the dark because I didn't prune them till this spring," says Eben Boalt of Bates and Boalt, Palermo, Butte county.

Mr. Boalt's place is reputed to be the frostiest in the Palermo district, being on the flat land. Certain it is that for four days early in January, a gale blew down from the snowy Sierras at the north and left snow and frost in its wake. Mr. Boalt's orchard was one of the hardest hit—the leaves curled up and dropped till they covered the ground. The trees were bare till June when scattering leaves began to appear at the base of the big limbs, creeping slowly but surely up and out on the limbs till the trees were flourishing by September. They still had many ragged dead limbs which made the orchard look neglected; but Mr. Boalt was determined not to cut out anything that might revive.



Orange Trees of Bates & Boalt in May and August, 1913.

His neighbor just across the irrigation ditch, went to work too soon. Assuming that the leafless branches were dead, he cut them out; and now what might be as fine an orchard as Mr. Boalt's is a fantastic collection of yellow thinly leaved sticks irregularly spotted about the field interspersed with great gaps where supposedly dead trees were pulled out in the spring and summer of 1913. Those stumps and roots and branches now form a long breast works along one side of the field, behind which it would be tolerably safe for a regiment of soldiers to defy the Mexican army.

After the growth of this spring was well along and the trees were almost normally covered with foliage, heavier on the live limbs because of the dead ones about 35 men were set to clean out all dead wood which composed perhaps 50% of the upper branches of the trees. No live wood was cut out intentionally.

Present Aspect of Orange Trees Cut Back by Frost Last Year.

Before the freeze, Mr. Boalt had conceived the idea of encouraging new growth in the center of his trees, topping it back so it would send out laterals and bear fruit, always tending to renew the inside to take the place of dead wood. The frost killed these, but a noticeable feature of the orchards now is the rather ragged appearance of the trees (without vegetative growth) due to removal of frozen limbs, and the thick growth of leaves about the trunk and lower limbs. This growth is thicker now than it would be, just to shade the bark from possible sunburn. The trees, however, are well balanced and practically as tall as if no freeze had hurt them. All pruning wounds were covered thoroughly with the best lead and oil paint.

It was noticeable that the bloom here as in the rest of the Palermo district was not so heavy as in the Fair Oaks district but the answer of several growers to this was reasonable. Probably not over a tenth of the blossoms at Fair Oaks could set and mature fruit, while there were probably twice as many as necessary at Palermo and the same was true of Thermalitos. It seems a great and useless waste of energy to produce so many more flowers than are needed.

One of the causes of the splendid recovery of Mr. Boalt's grove is the care he gives it. A strong constitution enables a tree to recover more quickly and fully from any kind of injury or discouragement.

All dead wood is cut out once a year and vegetative sucker growth kept down; but very little other pruning is normally done except to keep the outside of the trees symmetrical.

Irrigation is given twice a year, sometimes thrice. Water is saved by irrigating in furrows, letting the water percolate. The first irrigation last year when the leaves were off was begun July 15. The next was in November, proving unnecessary on account of the heavy winter rainfall.

No plow has turned the dirt in these groves for 7 years, and probably will not while the trees are profitable. He objects to the root cutting moldboard plows. The land, however, is repeatedly disked so that the soil is kept in fine condition. No clod masher or harrow is used, but the trees are hoed where the disk does not reach. This dry March was followed by rather dry weather necessitating an earlier irrigation followed by deeped cultivation.

Lupine was tried as a cover crop and discarded in favor of bur clover which on his place had more nodules though smaller.

For 16 years, Mr. Boalt has preferred the Bradley acidulated fertilizers at a cost of $42 per ton, believing that the effect of sulphuric acid is to make plant food more available. This is drilled into the ground to avoid waste by wind and the spreading of the fertilizer over the leaves to damage them. The first application is about 10 pounds per tree in May. A second very light application is made late in June and the last in the fall about September. Never is the total amount over 15 pounds per tree, though barnyard manure is used so far as it will reach. Especially does he not want to overfeed the trees while they are "convalescent," though there seems a rather remote danger of the roots taking too much nourishment at this stage.

With citrus fruit, success depends upon the individuality of the owner, as he must, in many cases, fathom trouble before it gathers too much headway. Mr. Boalt has not only used remarkably good judgment with his grove so far, but what is of most importance, after all is said, he is making his grove a profitable undertaking.

It is to be hoped that such experiences as those of the winter of 1912-13 will not be again necessary, but if such a thing should occur, it is safe to say that our citrus-fruit growers will now know better how to combat the effects of frost damage.

Pacific Rural Press

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D. L. SCHRADER - - Subscription Manager
R. E. HODGES } - - - Assistant Editors
J. C. LOOMIS }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., July 7, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date*	Normal to Date.	Maximum.	Minimum.
Eureka	.01	.01	.03	56	48
Red Bluff	.00	.00	.00	102	60
Sacramento	.00	.00	.00	90	54
S. Francisco	T	T	.00	62	50
San Jose	.00	00	.00	90	50
Fresno	.00	.00	.00	102	60
Independ'ce	.00	.00	.00	96	56
SanL.Obispo	.00	.00	.01	76	50
Los Angeles	.00	.00	.00	78	56
San Diego	.00	.00	.00	72	60

*Since July 1.
T means trace.

The Week.

And so they are—"coming Father Abraham, ten hundred thousand strong." And is it not a glad thought that in this great unified nation it is no longer necessary to ruin homes to save the country: that dark shadow has faded into history under a half-century of full sunshine of patriotism and prosperity. And the new impulse to movement is to make new homes, not to ruin old ones, and to build into new greatness a land which no longer needs saving, for it is secure in the eyes of the world and the hearts of its citizens. Very suggestive, it seems to us, are the words spoken last week by a prominent New Yorker, as follows: "The fame of California prosperity and the happiness of the people living here has gone to all sections of the East and Middle West. It has created wonder where there is so much business and industrial depression, and many persons are coming out here to see about it and look for new homes. A new and favorable impression is spreading throughout the East regarding the Pacific Coast."

No one can forsee the greatness of this State if the movement now setting in strongly is not checked or diverted. What have we done for it? Well, we have developed certain unique industries, most creditable to the pioneers who founded and to their successor who are now carrying them forward. These industries in their development will fitly utilize the agricultural phases of our exceptional endowment in soil and climate, but there are other phases of advantage in our natural resources and geographical situation which must be employed if the Empire State of the Pacific Coast is to seize its opportunity. What have we done toward this attainment? Certainly one very creditable thing, perhaps the greatest which just at this moment could be done, viz.: the Panama-Pacific Exposition which shows our appreciation of the national achievement in the Panama canal. We might have forgotten to take that up or we might easily have lost it, after we apprehended its significance, but fortunately California came through with the vast enterprise, and the result is that the opening of the canal is recognized throughout the world as the birthday of the Pacific Ocean, to which the borders of the old Atlantic bring homage rather than invasion. It is a great thing and it will determine the attitude of the old world toward the new world for all time to come. To have overlooked our opportunity in this line or to have lost it, might have doomed us forever to follow rather than to lead. Every one who has had aught to do in any way with the realization of that beautiful and impressive new Exposition city on the south shore of the Golden Gate should thank God that he gave strength to Californians to do their duty.

Relations of California to Pacific Advancement.

But clearly California, in building up unique productive industries, chiefly in soil products, in demonstrating the superior joys of life under our skies and in interpreting the canal aright in its world-influences, has only just entered upon the realization of her powers and advantages. Adequate emphasis, obviously, cannot be thrown upon this fact in a paragraph; it would justify an oration—if anywhere there now lives an orator. But we may borrow a suggestion which may help all to recognize how unsymmetrical has been our progress thus far: "We want more smoke in San Francisco," said Captain Dollar, the other day, "and more dirt, both coming from more manufacturing plants; we need a bigger payroll and more to sell to foreign buyers, and more money being paid wage earners in this city. Last year exports from San Francisco amounted to $69,000,000, but $22,000,000 of this was raw cotton, which will be shipped direct from the gulf ports with the opening of the canal. Exports of food products formerly made up 50 per cent of the total exports of the United States and they now make but 10 per cent. Tramp steamers come to San Francisco with European cargoes, and have to go to the Sound to load return cargoes. We want more manufacturing so that vessels can get return cargoes here. All we have ever exported from California has been products of the soil.

"Great Britain is aiding in the combination of three great steamship companies, the German Emperor is helping in the amalgamation of the Hamburg-American and North German Lloyd companies, and Japan is arranging the combination of the three great steamship companies of that country. Here the Government is trying to burst companies apart into single ships and then do away with those ships. In the years from 1840 to 1850, 90 per cent of the trade in China was done in American bottoms, and last year one-eighth of 1 per cent was handled in such ships."

And What Are We Doing About It?

Well, we are getting ready to give a great show which, as claimed above, is just the best thing to do at this moment. And what are we doing next? Wasting time and energy in fighting over a lot of crazy constitutional amendments, which never should have been thought of; or, at least, should never have been allowed to rise as State issues. We are planning nothing and publicly talking about nothing except things which are best calculated to dissipate the reputation which the pioneers built up for largeness of view and fresh air for industry. We are quarreling among ourselves over a lot of industrial fallacies which naturally fill with dust the eyes of those who are looking this way for business investments and opportunities. And for those who are coming seeking homes, we are beclouding what was once the pride of California, a clean, expansive intellectual atmosphere in which men might grow to the greatest thoughts and the noblest aspirations. Depend upon it, the present phase of our public life and affairs is directly antagonistic to the movement hither of the people with means and energy for development and State-building which we should desire and for which opportunity at this moment shines upon our territory as upon no other spot on the world's surface.

But some penetrating reader may now exclaim: "hold on there; you are getting out of your depth; we do not pay you for alleged statesmanship but only for farming." Such a one is right; it is only for farming, if you like, that we have broken out in this way. The future of farming in this State and the prosperity of those engaged in it, depends upon the building up of the State in all its opportunities and adaptations. Our farm products need a great development of manufacturing for local markets; they need a great expansion and freedom of export trade, for distant markets; they need smoke clouds over the cities and over the seas; they need villas on the hillsides and forests and mines in the mountains. Every handicap and hardship which falls in the pathway of legitimate enterprise in this State gives its last and most enduring shock to our agricultural industry, because it is the largest, most fundamental and indispensable of all our industries. Let no farmer, then, read himself into a class which may mistakenly think its fortunes depend upon industrial hold-ups. The price of products, the value of land, the profits of those who use land aright, are all conditioned upon industrial and commercial progress and prosperity—to the possibility of which the farmer is himself essential and from which he has a right to demand proper protection and reward.

The Availability of Sulphur.

Do not be shocked, timid reader: we have no idea of carrying the foregoing arraignment of industrial transgressors to what might seem to be its logical culmination. We simply desire to refer to a present horticultural aspect of sulphur. We recently printed the surmise that the United States pure food authorities would promulgate no new order on sulphuring dried fruit while a crop thereof was in process of preparation and sale. We were quite sure of that, but we had no idea that all decisions about sulphuring were to be reviewed and probably reversed. This is the most rational and wholesome thing which has come into view during all this summer of regulatory gloom. It has been very clear all along to those who knew most about California curing-fruit processes, that the pure-food regulations against sulphuring freshly-cut fruit before sun-drying should never have been conceived, framed or promul-

gated. It has been clear also that the wise use of sulphur in the California way was not only harmless but positively desirable, commercially and dietically. This old fact, so well known to practical people, seems now to stand a good chance of being bureaucratically declared, for the following statement is currently published: "Dr. Marion Dorset, formerly head of the biochemic division of the Bureau of Animal Industry in the Department, has been appointed a special agent by Secretary of Agriculture Houston to head a commission of three to conduct a country-wide investigation into the subject of food preservatives. At a recent conference of pure food experts in Kansas City, Dr. Dorset stated that Dr. Wiley was altogether wrong when he claimed that sulphur fumes applied to fruit bring about diseases of the stomach, intestines and kidneys, and that his own opinion coincided with that held by savants generally in Europe that sulphured food products are not injurious to health in any way."

It is expected that this new group of experts will reopen the investigation of California methods of sulphuring and the tests to determine the wholesomeness of the products. In view of the trouble they have had, perhaps California fruit-curers may feel that all is well that ends well, and yet it will be hard for them to forget the hardships they have had to meet in marketing in Europe the great weight of cured fruit which should have been readily sold in this country. European chemists arraigned sulphuring first, but quickly rescinded their regulations when they found them wrong. Therefore Europeans have been for some time freely feasting on cured fruits which were proscribed in some of the States of this country. Upon the findings of the new commission it may be expected that such proscriptions will be ere long removed, but the man who made all this trouble will probably go on fighting sulphur fumes, here and hereafter.

No Court Could Do It.

J. Holler of the Gilroy district is a fruit grower whom we have long personally known and for whose earnest convictions and broad sympathetic spirit we have great respect. Mr. Holler sends us a copy of some resolutions, which he submitted to the Rucker Farmers Union, embodying his views on the proposed 8-hour law, favoring it as a merited benefit to laboring men and arguing that "the true interests of the working farmer are in harmony with the interests of all other workers, and that we find the most permanent general prosperity and the highest standard of living among the masses—which include the farmers—in those countries where wages are highest and working hours shortest." We fully agree with Mr. Holler in this declaration which we have quoted. The place where farm laborer's wages are highest and their hours shortest is in this good old United States, right now. We cannot see in that fact any reason to hold that wages should be farther raised and hours farther shortened. Both are now at the extreme limit the business of crop-production will stand. But we will not argue with Mr. Holler on that point. There is however one item of his declaration in which he may deceive himself and others, and that must be made clear. He writes in closing: "We believe that the provision by which extraordinary emergencies of danger to property are excepted from the eight-hour law, very properly applies to such dangerous, uncontrollable, incalculable farming conditions and perishable farm products. We have no doubt that this interpretation of the law, which fully protects the interest of the farmer, is acceptable to all fair-minded persons, and that the law will be interpreted in this sense by any judge or jury."

Mr. Holler should know that no judge can do such a thing or allow a jury to do it without breaking his oath of office. The proposed amendment says: "Except in case of extreme emergency caused by fire, flood or danger to life or property." This means, of course, danger to property through fire or flood. It has no reference to loss of crop by lack of plowing, seeding, harvesting or other loss due to laborers stopping work. Mr. Holler is trying to read reason into a proposed enactment which has no reason in it, and we must warn him and all others not to be lulled into inactivity or complacent support by any such gentle anticipation.

Queries and Replies.

Querists must submit full names and addresses.

Sub-irrigation.

To the Editor: I wish to make a trial with sub-irrigating a small orchard of citrus trees. Would you be kind enough to direct me as to the best method to employ or refer me to any published information on the subject?—C. W., San Francisco.

There is no method which has been demonstrated to be of continued value and success. During the last forty years every kind of subterranean distribution has been tried, including board boxes; cement pipes or tiles, perforated or otherwise; iron pipes with various outlets—all these have been tried and abandoned. The only literature on the subject consists of descriptions of patented systems in the publications of the U. S. Patent Office and subsequent announcements of their undesirability in the horticultural journals. One often hears of the success of fruit on "subirrigated land," but the term applies to land moistened by gravity or lateral seepage in the form of natural underflow, and does not indicate any method of artificial subterranean distribution.

Vine Mildew.

To the Editor: In sulphuring grape vines for mildew is temperature of 80° necessary for results from sulphur? Is applying sulphur in early morning with dew on vines advisable? Also what are first indications of presence of mildew.—C. L. E., Elk Grove.

Vine mildew usually appears first as whitish, powdery patches on the younger leaves, which can be brushed off at first without showing discoloration beneath. Later the leaf surface may show darker under the patches. Later still the powdery covering spreads over the leaves which begin to curl upward. Appearances on canes are also seen. Sulphur fumes are given off very slowly below the temperature you cite but the mildew is also very slow below that temperature, so it does not matter. As it gets hotter the sulphur fumes increase—faster than the mildew, hence the victory. It is desirable to sulphur on foliage damp with dew, but not when foliage is dripping wet, for then the distribution is less perfect and the sulphur aggregated in masses difficult of vaporization. Sulphuring dry vines is all right but there is great waste in sulphuring in the wind. Full details of mildew and its treatment can be had by sending to the University Experiment Station, Berkeley, for Bulletin 186.

Rose Rust.

To the Editor: What is cause of the disease which affects the enclosed rose-leaf. I have many bushes whose leaves are in this condition. What can I do to eradicate the trouble? And what would you suggest as a preventive in the future?—J. M. H., Ben Lomond.

The cause is a fungus Phragmidiuno sub corticum (now will you be quiet). It can be prevented by spraying with Bordeaux mixture or, if you do not like the blue-whitewashy appearance, use the copper-carbonate solution. Fortunately the tea and hybrid tea roses are not invaded by this fungus but some of the hybrid perpetuals are hit rather hard and are often rejected as the easiest escape. The fungus appears late in most places, for it needs considerable heat in connection with moisture, and one can get a good blooming season ahead of it. Then let it take off the leaves; let the bushes rest for a while, then cut back and irrigate well and get ready for the fall bloom which is usually not affected because of the dry heat of the early autumn. Therefore, fight it or dodge it as you think best.

A Seedling Apricot.

To the Editor: I am sending you two apricots from a seedling tree. This is the first that the tree has borne. It came from the seed four years ago and has about 50 fruits on it this year of which these are a fair sample. Have they any special merit?—C. A. Hilton, Modesto.

It is a fine apricot of Moorpark size and shape but superior because of ripening evenly. This character alone would make it very desirable if it should bear regularly and sufficiently. It will have to be kept under observation for several years to determine its bearing habit. At least two dozen very promising seedling apricots have been discarded in this state during the last half a century because the trees became slack in bearing as they became older. This tree is worth watching.

Growth from Cuttings.

To the Editor: Will you kindly tell me if I may be able to start trees from maple branches planted in wet sandy place as one does willows or poplar trees? If so what time is the best to start them—is it too late now? Also, are not grape cuttings started in the fall?—E. F. D., Montague.

Yes; quite a number of maple species start quite readily from cuttings—not so responsively usually as willows and poplars but quite well. Take well matured wood of the previous year's growth and put them in such a place as you describe toward the end of winter (in your district) when the ground has lost its danger of standing water and begun to warm up a little. The cuttings should of course still be dormant and it is too late to start them now. But maples grow so readily and quickly from seed, that the cutting method is not much used. We would prefer to sow this fall such fresh, well ripened seed as we could gather than to depend on cuttings, but you can easily try both. Grape cuttings should be handled just as above described for maple cuttings.

Apple Culture in Sonoma County.

[By O. E. Bremner of Santa Rosa at the Davis Fruit Growers' Convention.]

(Continued From Last Issue.)

Inter-Cropping.—The planting of berries, either strawberries, Logans, Mammoths, or raspberries, in the young apple orchard is universally practiced and results in a very favorable opportunity for the orchardist. It enables him to make a good living on the land while waiting for his apple trees to come into bearing—in fact, he sometimes makes more on these secondary crops than he afterwards does on his apples. It is not uncommon to have men clear $200 and more per year an acre on these berry crops. On new land, potatoes are usually planted the first year, followed by berries, which are allowed to remain until the trees are from eight to ten years old.

In this county thorough cultivation is practiced, and, in many cases, the orchards are worked every week up to the first of July and even later. A dust mulch, from three to five inches, is formed, and never does the soil lose its moisture, even the strawberries continuing to bear late in the fall without a drop of irrigation water. A variety of tools are used. The gang plow is being discarded by the best orchardists as it tends toward the formation of a plow sole; deep and shallow alternate plowing should be practiced. The disc is often used, particularly for the second plowing; corrugated rollers are being replaced by the sub-surface packer for smoothing the ground and breaking up the clods after the plow. The spring tooth harrow is a favorite for late stirring; some like the disc spader or the acme harrow, in fact, anything to stir the soil and leave a perfect dust mulch.

Cover Crops.—Cover crops are important as this soil is apt to be deficient in humus, particularly if before planting the orchard it has been in grapes, grain, peaches or other fruit. If an old orchard is to be sown, it is best to use rye the first year, and this should be plowed under early, many growers plow their rye too late. If favorable growing conditions arise, the middle of February we would consider about the right time to plow it under, and the first of March not too late, under ordinary conditions. This may be followed up the second year with rye and burr clover. The soil generally should receive lime before planting burr clover, and ought to be inoculated where no burr clover or other legume is found growing naturally. A dressing of manure will help to start the cover crop and many of the growers are shipping in car loads of chicken manure from Petaluma as well as other manures from outside the county. This cover crop is planted early in the fall before the first rains. This soil originally produced large crops of clover, wild oats, lupins, alfilaria and other humus producing grasses, but by the old system of cultivation, these have almost entirely disappeared, and the orchardist of today realizes that this original condition must be re-established and is now working toward that end.

Pruning.—The system of pruning generally practiced here is extreme. They start cutting back severely the first few years to give the tree a stocky, heavy body. The second and succeeding years up to ten years, it is a common practice to cut back to eight or ten inches of growth each year and at the expiration of this time you will find a tree, low headed, stocky and open, and ready to hold any load of fruit. Very little heavy pruning is required in later years if this system is adhered to. It prevents the removing of large limbs when bearing wood is valuable, and such removals are decidedly detrimental to the tree. Spring, or early fall pruning, where big cuts are to be made, is preferable. Pure white lead mixed with raw linseed oil and applied thick is the best paint for cut surfaces. Gravensteins, in particular, must be thinned, and only one apple left to a cluster, and while they do not require as much thinning as most other varieties, careful work must be done as they are short stemmed and if allowed to crowd, the best will be lost. Of course, the aphis apples and those deformed by disease will always come out first in crowding game. As a usual thing this apples does not cluster so heavily as other varieties, but is well scattered so that in leaving only one to a cluster, a big crop is still retained.

The Marketing of the Crop.—The time was, even in this district, when any old thing sold for an apple and only the top layer counted. It was hard for the packers to turn out straight cars on account of the multitude of the varieties. One packer, claiming to have shipped fifty-three in a single season. But now the pack is as near perfect as human skill can make it. Doubtful apples are double sorted and not a scale mark, speck of scab, or codling moth stain enters the box. We believe that the apple growers union has helped to bring about this condition. It is a stock corporation, composed of the apple growers themselves and they really control the situation, as the union consists of a majority of the growers and handles the largest percentage of the fruit. This union is more than a selling agency. The growers are banded together for mutual benefit not only in packing and selling the fruit, but also in cultural and spray operations. Their Gravensteins are in demand in Australia, Europe and the large eastern centers, not only because of the excellency of the apple itself, but also the honest pack and the square deal the union gives. The development of the apple industry in this district has been rapid and the future output will be greatly augmented by the young orchards planted the last three or four years. The Sebastopol section has learned the advantage of doing one thing well and the one thing for their district, as far as apples are concerned, is the production of the Gravenstein.

[We reserve for another time Mr. Bremner's specific suggestions for insect control in the apple orchard under Sonoma county conditions.—Editor.]

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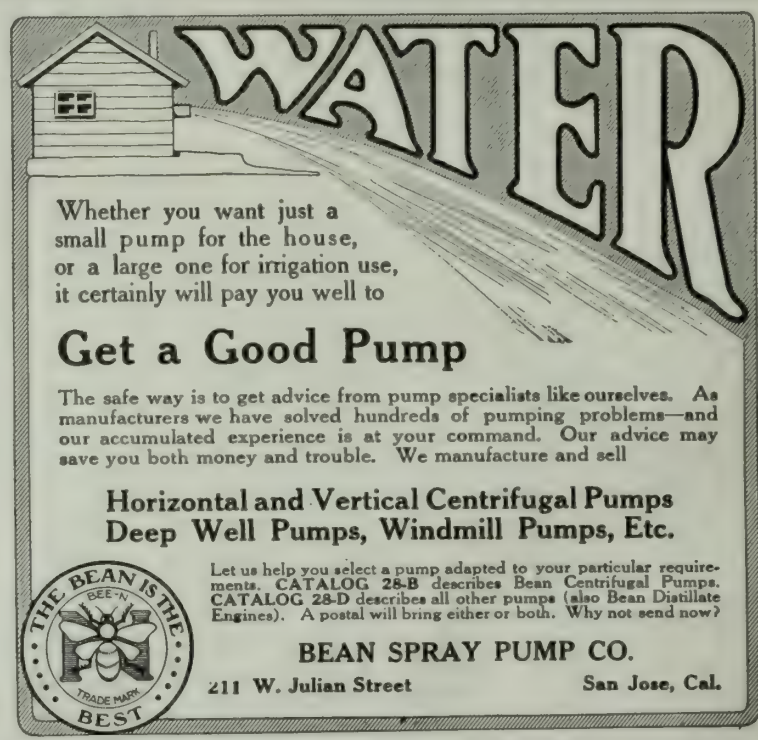

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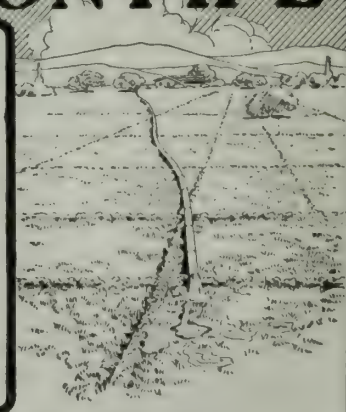

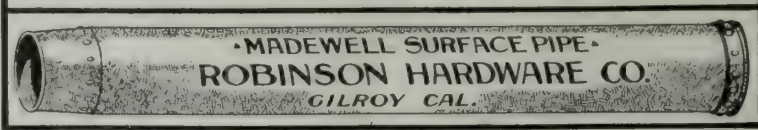

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Fig Growing and Marketing.

[By HENRY MARKARIAN, of Fresno, at the State Fruit Growers' Convention.]

The fig industry of California is annually becoming a great and important factor in the export trade of the State. A little historic glance may prove of some interest to you. Fig culture was first introduced here by the Spaniards. Their introduction is known as the "Black Mission" variety, and was grown in gardens and back yards, but had no great commercial importance as dried figs. At that time, occasionally one could find them sold green in San Francisco and Los Angeles markets. The "White Adriatic" was introduced in Fresno county in 1884. My father, M. Markarian, planted the borders of his vineyard to this variety. His example was emulated by others who planted the boundaries of their vineyards to Adriatic figs. Very little importance was attached, at the outset, to fig orchards, as the growers were uncertain of fig culture ever becoming a profitable industry. This is the reason that there are so few bearing orchards now.

The fig trees reached maturity, but there being no demand for them, interest in the culture decreased. This apathy toward a promising industry was directly attributable to the growers' lack of knowledge to appreciate the product, cure the same, and put it on the commercial market.

WHITE ADRIATIC.—In 1893 we established a packing-house on our vineyard to pack raisins and ship to Eastern markets. This proved a good success. The following year, we bought a few crops of figs; especially do I remember how the crop on a 10-acre orchard cost us only the sum of $10, which alone yielded about 10 tons of dried figs that brought good results. Similar low prices prevailed on other places, which was equivalent to those crops being given away. At first we did not know how to handle the crop, but conceived the happy idea of packing figs just the same way as we were packing raisins. Thereafter, our shipments consisted chiefly of raisins and figs. The first shipment of California figs in any manner that went out to the east of the Rockies, was made in 1894. We encountered a good deal of doubt on the part of the Eastern houses as to the keeping quality of California figs, which we had to guarantee. Our efforts along this line were partly compensated by the reception accorded to the home product. As the industry advanced, the demand for figs increased, thus affording a golden opportunity to the growers to stimulate the fig culture. Others soon followed in our footsteps by establishing packing-houses to handle the crops for export trade.

AN OPENING FOR CALIFORNIA.—One of the primary causes of the successful California fig export trade was the destruction of Smyrna figs by a heavy frost in Asia Minor in the year 1898. That year, the East largely depended for its supply on California product, at which time Seropian Bros., packers, accumulated a fortune of $40,000 by having a corner on the fig market.

THE SMYRNA.—In 1900, through the efforts of George C. Roeding and also the Department of Agriculture, the famous fig wasp known as blastophaga was established in Roeding's smyrna fig grove. This revolutionized the fig industry in California and opened a new era before it. The idea of California figs being of inferior quality compared with foreign figs was soon dissipated by the introduction of the Smyrna variety in our markets. There are two grades of figs, the Smyrna variety and the Adriatic, which we offer to the Eastern trade, the former being the king of figs.

I am an earnest advocate for the Smyrna figs, and I have several reasons for my advocacy. First, the superiority of the fig; second, the quick maturity of the tree (Smyrna fig trees mature in 6 years, White Adriatic in 8 years); third, the trees show very little or none of the root diseases so common to Adriatics; fourth, the trees are well adapted to an orchard form when they are planted 30 by 30 feet apart, whereas the Adriatic at this distance would not be satisfactory. The tendency of the Smyrna fig tree root is to go downward and deeper into the soil, while those of the Adriatic have a tendency to spread circumferentially in a shallow depth. Fifth, because it is a fine and luscious fruit, infinitely useful and nutritious, and free from souring, and it may be shipped green and find a ready market with every prospect of good financial return.

Finally, the demand for Smyrna figs is greater than for any other variety of figs; and I can safely guarantee that the market will not fluctuate on account of overproduction within the next 20 years. I am fully convinced, judging from unabated activities shown in the production of Smyrna figs, that this industry is destined to become one of the leading fruit industries of California. I do not exaggerate a particle when I say that 75% of the annual fig output is consumed by the biscuit and pastry manufacturers of the country for making the well known delicacies such as fig-bars, fig jams, fig bisciuts, etc.

GROWING FIGS.—To grow figs successfully, one must study the nature of the soil and also the climatic conditions. The best region to grow figs for drying would be that geographical portion of the San Joaquin valley that nas Merced on the north, Bakersfield on the south; and commencing from the center of the valley, the closer you get to the Sierra foothills the more preferable it is for this culture. Red, heavy and deep soil, with plenty of irrigation water is desirable. The red hardpan soil, if properly blasted, is good for fig culture, although it takes longer time to mature in this kind of soil, yet it will produce clean and elegant fruit, with hardly any splits. Under these favorable conditions trees will be very long-lived. In sandy soil (drift sand) and alkali the experiment is an absolute failure.

Another section fairly adapted for the culture of the fig is the region lying between Marysville and Red Bluff in the Sacramento valley.

Being one of the pioneers in this Smyrna fig culture, I have faced many difficulties, but have overcome them with patience and common-sense experiments. These difficulties have now vanished through the giving away, from time to time, of the secrets by experienced growers to beginners, and the arduous, incessant work of G. P. Rixford of the U. S. Department of Agriculture. My chief trouble arose, in the early days, from insufficient knowledge of caprification. After securing a collection of different varieties of capris, which was imperative in the Smyrna fig culture, my most difficult problem was satisfactorily solved.

The annual production of figs in California is approximately as follows:

	State, tons.	Fresno Co., tons.
1. White Adriatic..	5,000	3,800
2. Smyrna figs	600	400
3. Black Mission...	300	100

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BEANS FOR FLOOD LANDS.

[Written for the PACIFIC RURAL PRESS]

Pretty soon now, about 8,000 acres of beans will be planted in Sutter county, 6,000 or 7,000 of which will be in that basin which, like the valley of the Nile, overflows each year leaving about an inch of fresh fertile mud over all. This land will be covered in spots with more or less water till August, but has been showing the higher spots since early May. Contrary to the usual rules for plowing, the bean farmers of this section plow their black tule-bog land wet. They get higher levels plowed first and follow the water as it drains away.

In breaking new tule land, the roots are more or less in the way for three or four years, but the water floats some of them away during the floods. The object of the early and repeated plowing is to air out the soil; for even the large white Lady Washington and the pink beans which are universally planted here, need air for their roots.

The pink beans are specially adapted to this section and are not grown commercially in other bean-growing States except Texas, according to George Tharp, of Knights Landing. They grow more to vine than the large white beans, but not so much as the small navy beans, which are not raised here on this account. The pinks are the best producers and hardiest, while limas fail in the hot summer of this district.

The bean roots spread out near the surface, the water table never being more than 4 feet down. They cannot stand alkali at all, but the flooding and drainage obviate much of this. Alkali trouble is indicated by the bloom dropping and the plants dying. The Sutter Basin company is installing six drainage pumps at a cost of $105,000 in Reclamation District 1500, to throw 1100 cubic feet per second. This will enable the desired June planting all over the district in any year.

Among the pioneers of bean growing in Sutter county is George Tharp, who has 250 acres this season for beans alone. After working up the soil thoroughly, the beans are drilled with a corn planter, one or two in a place, 4 inches apart, in rows 32 inches apart. Rows for the pinks are farther apart on account of their vine growth. It takes 25 to 30 pounds of the pinks per acre and 40 pounds of the whites.

In good weather the beans are up in three or four days and are cultivated diligently, for Mr. Tharp is a crank on keeping the soil in fine condition. No irrigation or fertilization are desirable on account of what the Sacramento river does for them every winter.

In 90 to 110 days, a 25 to 30-sack crop is matured. Mr. Tharp has raised 50 sacks of about 90 pounds each, per acre, in a favorable season. The weather should run about 85 or 90°. The beans can stand 100°, but such a temperature continued a week hurts all varieties, the whites especially. The vines are cut with a sled armed with knives six feet long which come together in front and spread far enough behind to cut two rows at once. Ten years ago the vines were pulled by hand. Later they were cut with a plow underground, but wheel machines shell too many.

Men put the vines in small piles in rows about 20 feet apart, and if three weeks of the hot electric north wind come, the beans will dry out ready to thresh. Some seasons they require two weeks to dry, and since it is near the rainy season, there is some danger of wetting, so that Mr. Tharp's entire crop was lost one fall. But ordinarily the rains do not injure the beans. If the whites get wet through the pods, they discolor yellowish. The pinks have an inner partly waterproof lining and do not show discoloration on the outer skin so they are safer for late planting, which sometimes continues to July 20. They are threshed in a bean thresher like grain.

A sort of wire worm is becoming troublesome in the newly planted seeds and young shoots, so that government specialist Parker will be called this summer to work out a method of prevention. They work in small isolated areas sometimes extending over as much as the 15 acres that Mr. Tharp lost last year. No weevils, beetles, red spider, or anthracnose are observed in this district.

Some growers contract their crops ahead to dealers who come to buy. Mr. Tharp prefers to hold his and sell for cash, showing the goods he has to sell, so there will be no opportunity of the buyers refusing the crop on account of the variations in quality and cleanness. The bean straw makes fine sheep feed.

MANGELS ON ALKALI.

[Written for the PACIFIC RURAL PRESS by W. D. GUTHRIE.]

Part of the Panama ranch near Bakersfield seemed to be good for nothing but salt grass. In some spots even salt grass would not do well on account of alkali. Two and a half years ago, Manager F. E. Mace plowed an acre that seemed to be about as bad as any on the ranch, and worked it down to proper condition.

About March 1, mangel beets were planted. The result was a fair stand and a fair crop. Last year beets were again planted in March, with more promising yield. This year, the beets were planted in December. Mr. Mace now believes that had he planted earlier the previous two years he would have had better crops.

The writer has never seen any healthier and more vigorous looking beets than those growing on this alkali spot. Beets seem to have the power to use a certain amount of alkali.

On this ranch the beets are used for hog feed. Hogs like them and grow fine. In fattening, the hogs are given an additional feed of Egyptian corn in the proportion of 1 pound to every 100 pounds of hog per day. This gives satisfactory results.

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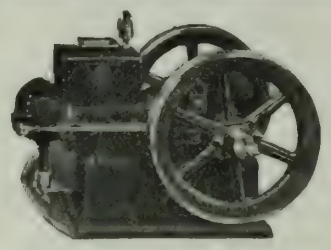

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Sulphur Good for Dried Fruit.

[Written for the PACIFIC RURAL PRESS]

I must harvest 35 acres of apricots in three weeks and dry all that I can't sell to the cannery at a profit. It takes nearly three weeks to dry apricots naturally in the sun. Using sulphur, we can dry them four days in good weather and stack the trays. If we couldn't use sulphur we would have to rent land to dry them on—it would take all outdoors, and we simply couldn't handle the crop. But that isn't the worst of it if we couldn't use sulphur.

A neighbor helped me dry one crop. He wanted to have some unsulphured for his own use. I told him to select the trays and take care of them. When they were cured they were so black and uninviting that he preferred the sulphured product.

My brother-in-law came out from Iowa a few years ago with a weak stomach and a hankering for fruit, and a fear of sulphur. I let him cure his own for home use without sulphur. He ate a few, then bought sulphured apricots, and has used the sulphured fruit ever since without harm to his stomach.

If we couldn't use sulphur in drying apricots, we couldn't get anyone to eat the sun dried product. It would be dark and probably wormy. Nobody would buy it and they would be losers while I would be ruined.

Dr. Wiley wants us to dip them in a saline solution and dry them artificially. That might work, but if I put up a drying plant big enough to handle the crop and then furnish heat, I will add that cost to the high cost of living that everybody is fighting; and the consumers will pay that added cost or I will go out of business and there won't be any for common folks to consume.

But there is no need to add that cost to production. I used to take sulphur and molasses to improve my health every spring. A bunch of University students on the "poison squad" got fat eating sulphured fruit. There is not much left in the fruit anyway after it has been exposed four days to the sun.

Sometimes a scheming packer buys cheap dark fruit, soaks it up, sulphurs it excessively, packs it soon and perhaps there will be too much sulphur left in that fruit to taste good, but it won't hurt anybody.

As the grower uses sulphur in drying apricots, there is no reason for discarding it and losing the benefit of California sunshine; there is every reason for continuing its use.

FAVORS THE 8-HOUR LAW.

To thge Editor: If you are running your paper in the interest of the farmer—and you say you are—put on your thinking cap and boost for the 8-hour law instead of hooting it down. It will be the greatest blessing you can confer upon the farmer, and for years after it passes you will want to celebrate its advent.

In the first place, eight hours is plenty for any man or woman to work. Besides, he will do as much and better work in eight hours as he will in ten; if not, more work, month in and month out. The farmer's mules, instead of traveling two miles per hour, will go two and a quarter on less feed.

You are talking about shortening the country's food supply—why, that is just what the farmer wants, because he can then afford to pay for extra help, and the consumer will never notice it.

You are speaking about the cook. It is a poor cook that could not get three meals in eight hours. The law will be that a man can work only eight hours, but if he rests between times that resting time doesn't count. As for sociability, the farmer and his men will get in closer touch, because they will have more time. If you have any thought for the man who works for wages, and in the interest of whom the law is proposed, you surely have to stop and think; for what is he? He is less thought of than a mule, still if you treat him right he will work for your interest.

There are any number of things that could be said in favor of the law. If you want to print this, all right; if not, all the same. Possibly I might have given some food for thought.

Merced. H. HILLERS.

[Good strike for your side: the ball is in the air: who will catch this fly in the left field? We would like to play umpire a while.—EDITOR.]

BRITONS AS VEGETARIANS.

It would seem that we are rapidly approaching the time when meat will be numbered among the luxuries. At any rate, the problem of our meat supply is receiving earnest attention in many quarters, and it is generally admitted that the state of affairs is very serious.

During recent years the number of cattle in the United States of America has diminished enormously, whilst the population has increased to an even larger extent. The result is that, whereas huge consignments of meat used to be sent to this country from United States, hardly any has been sent during the past two years.

In 1909, 318,000 animals were imported alive into this country. The number imported in 1913 was 11,000. The deficiency, of course, has been made up by frozen and refrigerated meat; but clearly that will soon be as difficult to obtain as the other. And, although such countries as Mexico and Siberia possess great cattle-bearing possibilities, it must be borne in mind that it takes about four years to bring an animal to beef-yielding age.—London Ex.

GRADING APRICOTS AND CREAM.

[Written for the PACIFIC RURAL PRESS]

I wanted to get an article from F. C. Willson of Sunnyvale on the value of grading dried apricots, for I understood that he separated them into "Fancy" (extra large), "No. 1" (second size), "Small," and "Slabs" (flattened and shapeless because too soft when cut for drying).

"Better say nothing about it. Buyers put a premium on poor fruit. It doesn't pay to separate them. I took special pride one year in picking out the fanciest dried cots by hand. A firm not located here bought them and I happened to see them dumped loose into a carload of little black stuff, and it hurt my feelings. I grade now, but don't get a proportional difference in price."

I thought of the dairyman who once tried to produce pure cream but lost his ambition because he saw that cream poured in with sour dirty stuff and got the same price. This is putin a premium on unsanitary cream.

If a room becomes filled with smoke, a towel dashed in vinegar and hot water and wrung out, then taken and thrown above one's head through the room, will remove all smoke in a few moments. Only a small portion of vinegar in a little water is sufficient for the purpose.—Mrs. C. W. R., Minnesota.

CLASSIFIED ADVERTISEMENTS.

Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

TREES AND NURSERY STOCK.

FOR SALE—Genuine Burbank Spineless Cactus cuttings, raised at Marysville, from slabs purchased of Burbank. Can furnish forage and fruiting varieties at $15 per 100 slabs. Send your orders to DARROW - WINCHESTER COMPANY, 1605 Telegraph Ave., Oakland, Cal.

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Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

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20 ACRES subirrigated land, 3½ miles from Modesto in Wood's Colony; 8 acres bearing assorted fruit, 1 acre Thompson's Seedless grapes, 11 acres alfalfa; good improvements. $300 per acre; terms. ALVIN BROOKS, R. 5, Modesto, Cal.

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POULTRY OR FRUIT—Young man, single, age 26, desires, by September 1st, responsible position on commercial poultry farm. Agricultural College training. Ten years experience. Would consider opportunity to learn something of the fruit business if work for winter is guaranteed. References furnished. State wages. Geo. Monteith, Box 135, Clint, Texas.

Working orchard foreman (single), must be experienced in general orchard work and have a knowledge of drying fruit. Wages $45.00 a month, board and room. Address Box 222, Pacific Rural Press, stating age, experience and references.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

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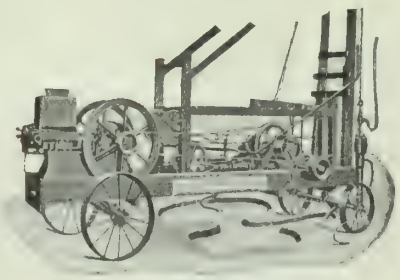

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NOTICE OF REMOVAL OF PRINCIPAL PLACE OF BUSINESS.

Pursuant to the written consent of the holders of more than two-thirds of the capital stock of Roberts Brothers Company, a corporation created and existing under the laws of the State of California, which consent was duly filed in the office of said corporation at the Sheldon Building, First and Market streets, in the City and County of San Francisco, State of California, on the 6th day of July, A. D. 1914; and pursuant to a resolution of the Board of Directors of said corporation, which resolution was duly adopted at a meeting of said Board of Directors, duly called and held at said office of said corporation on the 6th day of July, A. D. 1914, at which meeting a quorum of the directors of said corporation were present and acting:

Notice is hereby given that the principal place of business of said corporation will, on the 1st day of August, A. D. 1914, be changed and removed from said City and County of San Francisco, to the City of Oakland, County of Alameda, State of California, on and after which date the principal place of business of said corporation will be said City of Oakland, at No. 465 Fifty-ninth Street.

This notice is published by order of the Board of Directors of said Roberts Brothers Company.

Dated at the City and County of San Francisco, July 6th, A. D. 1914.

DELOSE ROBERTS,
Secretary of Roberts Brothers Company.

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Constructive Agriculture—No. 27.

IRRIGATION PRACTICE IN THE SACRAMENTO VALLEY.

[By W. S. Guilford, Director of Agriculture, Sacramento Valley Irrigation Co., at State Fruit Growers' Convention.]

(Continued From Last Issue.)

PREPARATION OF THE LAND.

Unless the owner of the land—or the man who is to do the leveling—is very familiar with this kind of work—it will pay to get a reliable, experienced engineer to lay out the place. By experience, I mean one who has had experience in the particular locality and under similar conditions to those prevailing on the place to be improved. In this way it is possible to benefit by the mistakes that have been previously made in handling the soil, water, etc., in the district in question.

Even if the owner is experienced—a map of the place—with the proposed present development and all future development should be made—showing the approximate location of drains, ditches, checks, or borders, boxes, etc.

During the early days of the development of the Sacramento Valley Irrigation project these farm plans were made by company engineers for all settlers who made application for them—and blue prints were furnished. The engineer first discussed with the purchaser his general plans for developing his place—found out about where he wanted to build—how much alfalfa he wanted and how much orchard. He then laid out the drains and ditches in the most convenient places for operation and where they could be built most cheaply. Some changes have been made in these plans by the settlers as they have developed their places—but in the main they have been followed and even though only a small part of the place may be developed during the first or second year—such work as is done is not wasted and will not have to be done over again to fit into future plans—as has often been the experience on farms developed in a haphazard way and without definite plans.

There seems to be a good many places where a prospective irrigation farmer can spend money for the counsel and advice and service of men experienced in the details of the business with the assurance that if he gets the right men and the right service it will be money very well spent. In fact $100 spent for advice could easily save $1000 in real absolute value in the purchase of one place rather than any one of several others that might seem equally desirable to a novice—and an experienced engineer can surely make a big saving in development costs by properly laying out and planning the work to best meet the requirements of the particular job. The per acre cost of such work on the developed place will not be great.

There are a great many good land levelers and farm developers in the Sacramento valley now—and many good schemes for removing the dirt required in digging drains, constructing ditches, making borders and leveling the land betewen the borders—assuming that a border system of checking land for alfalfa or trees is to be used. Any system is a good one that results in the construction of drains of ample depth and capacity—ditches big enough to carry the water required and with good, full banks that will insure their stability and a minimum of breaks and trouble—borders or checks large enough to control the flow of water, but not larger than is necessary to accomplish this after they have settled—and in land well leveled between the borders so that the water can be evenly applied and quickly and completely drained off when required.

For a great deal of the heavier, rich land in Glenn and Colusa counties in the Sacramento valley, checks or borders 25 to 50 ft. wide and 660 ft. long have been found very satisfactory for alfalfa—and for tree planting it is an advantage to plant trees on these small borders, thereby giving a little more open and well aired soil for the roots to start in. This is especially beneficial if there is a wet year one or two years after planting.

As I have said—there are many good land developers in the Sacramento valley—with many favorite plans for proceeding with a job of leveling—but my way is to first dig the drains—then the ditches—then the borders or checks, and later move such dirt as is necessary to complete the leveling of the land between the borders. Dirt must be moved—either in making cuts or fills for each of these features—and my plan is to never move the same scraper full of dirt but once—if it is possible to avoid it. The dirt that comes out of the drain is used for any part of the balance of the job where it is most convenient to waste it—on a ditch bank—a border or in a hole in the check—but it must be deposited where it will not have to be moved again. The dirt excavated from the delivery ditch goes in a border or in a fill, and dirt required for banks comes from high places in the check. Then, the balance of the dirt for the borders comes from cuts in the checks—and any remaining fills to be made in the checks after borders are made must come from the remaining cuts within the checks.

Now, this work is frequently done in exactly the opposite order—the land is leveled with some leveling device or even with scrapers, then the borders are made. Some of the same dirt that has been moved to fill a hole in the check may have to be moved again to get dirt for the border, and some more dirt moved again to fill the hole just made. Then, a borrow pit must be made to make ditch banks, and frequently, a long haul made to spill the dirt from the drain evenly over the check.

I do not recall an instance of too great care being used in the leveling of land. I know of many cases where too much money has been spent for the results accomplished—but I mean where a job has been done so well that the land irrigates more easily than is profitable or where it drains too perfectly.

But everywhere, there are examples of the loss of crops and money through too careless preparation of the land for irrigation. High spots that do not get water—low spots where the crop drowns out—ditches that break—drains that are too shallow or that do not work—all of these things can be remedied with far greater ease and much less cost before a crop is planted than after—and there is no better or surer way to find out about these things than to try out the job with a head of irrigation water before any crop is planted. This will show up the weak places at a time when they can be easily and quickly fixed. Then after they are all remedied try irrigating the land again before planting—there may be several other little things you will be glad that you have fixed before while there is no crop in the way.

And it is a wise thing for the beginner to lay out a small piece for the first planting—rather than the whole place. There is no way to learn how to prepare a place for irrigation so that it suits your individual tastes so well as to fix up a small acreage first. There will be sure to be some little changes you will want to make in the balance of the place.

Now about the

WATER DELIVERY SYSTEM:

Whatever this is—whether open ditch or underground concrete pipe—have it of ample capacity. I know of no better way to determine what this will be for the individual needs of any particular place than to visit some place that a system similar to the one contemplated has been installed. An engineer can be of help on the size and capacity of concrete lines—as he can on open ditch capacities—but any irrigator who has handled a head of water in a ditch will tell the inquirer that the ditch must be plenty big for the head of water—have big, full banks—and if possible, the slope of the banks should be such that they can be mowed with a horse mower. It is hard to find dirt to enlarge a small ditch after a field is completely seeded to alfalfa.

The working out of all of the details of irrigation practice in the Sacramento valley is a proposition that is very much in its infancy—the best general advice that I can give to anyone is to study the individual problem and don't be afraid to dig holes in the ground.

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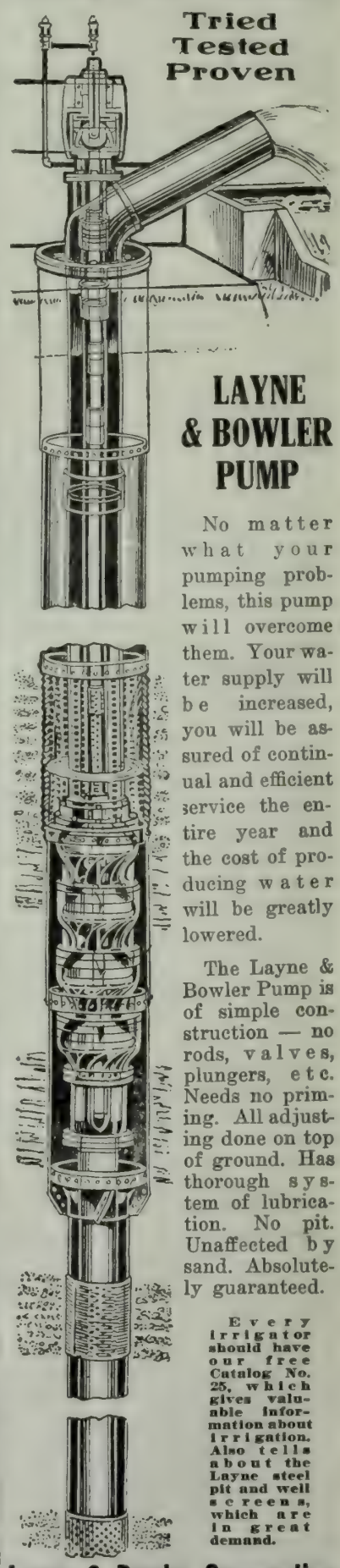

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Relations Under Workmen's Compensation Law.

To the Editor: I read with considerable interest the Fruit Growers' Convention paper of G. H. Hecke of Woodland, which appeared in your issue of June 20th and I was glad to find in that article an expression of belief on the part of Mr. Hecke to the effect that, so far as farmers are concerned, "No fault is found with the Workmen's Compensation, Insurance and Safety Act except that both parties should bear the burden of all contingencies to life made in pursuance to filling the bread baskets of the people."

I am wondering just what proportion of this burden of contingencies of life due to farm accidents Mr. Hecke, and the farmers of California in general, think that the farm laborer should bear. I entertain the idea that it is possible that farm laborers are now bearing a larger proportion of that burden than Mr. Hecke, and farmers in general, may be aware of.

Let it be remembered that compensation for industrial injuries contemplates the payment to injured persons of 65% of their average weekly wage during the period of temporary disability, after the expiration of two weeks, and in the event of death or permanent disability not to exceed, except the disability be total, or nearly so, three times the average annual earnings of such employee. The first issue to be determined is what part of the total loss resulting from the injury this amounts to and this issue can best be determined by ascertaining what the insurance rate would have to be if the injured employee were, in the event of injury, to be paid his full loss, or his dependents in the event of his injury, to be paid his full loss, or his dependents in the event of his death. I have had our actuary take up this subject and calculate what the insurance premium would have to be if the injured employee or his dependents were to be made whole and were to be paid the full loss resulting from the injury, and he gives me the following estimate.

If the disability indemnity were to be paid from the day of the injury instead of from the fifteenth day after quitting work on account of the injury, and paid in full, there would have to be added to the premium rate 16 cents on each $100 of payroll.

If the wages were to be paid in full from the fifteenth day on to the determination of the disability, instead of 65% of them, there would have to be added to the rate six cents on each $100 of payroll.

Finally, in the case of permanent disability, if the compensations were to run as long as the disability runs, that is, for life instead of for very limited periods, (during which it is hoped that those who are permanently disabled may readjust themselves to their maimed condition), that is, if the payments were to make good the whole loss sustained through such permanent disability, there would have to be added to the premium rate $1.51 on each one hundred dollars of payroll.

It will be called to mind that the existing rate which the farmer pays for compensation insurance is $1.50 on each $100 of payroll, so that, if the insurance carrier were to make good the entire loss resulting from accidents, the insurance premium, to be paid jointly by farmer and farm laborers, as Mr. Hecke feels would be fair, would be $3.23 on each $100 of payroll, of which the farmer should contribute one-half, or $1.61½, and the farm laborer $1.61½; but, as it is under the Act as it stands, we find the farm laborer contributing $1.73 and the farmer $1.50.

I have no doubt that if the farmers of California become fully persuaded of the justness of Mr. Hecke's contention that the burden of industrial accidents should be borne jointly by the farm laborer and the farmer, and that it also should be borne equally, the legislature could be induced to so enact provided that the whole burden of farm accidents, and not less than one half of it, is to be covered by insurance and the premium paid half and half.

This estimate of our actuary makes evident what I have from the first contended, that the biggest half of the burden of industrial accident is still being carried by the injured persons and those dependent upon them. What the law imposes upon employers is a limited insurance, limited to considerably less than enough to cover one-half of the entire burden which the 4000 accidents which take place in this State per month imposes upon employers and employees of the State.

There is another angle from which we may view this issue. Our actuary tells us that, rapidly running over the premiums paid by about 450 farmers who have insured with the State Compensation Insurance Fund, (only a small portion, however, of all those who have thus insured), the average premium paid is found to be $26.81 per farm.

The average wage of farm laborers may perhaps be taken at $30 and board at $15, making the average annual earnings $540, the average weekly wage as we compute it, $9.95—65% thereof equaling $6.49. Now, under the Act, the injured person gets no indemnity for the first two weeks, which loss in wages is his direct contribution to the premium his employer is required to pay and this amounts to $12.98, almost one-half of the premium which the average farmer pays for compensation insurance.

Upon reflection, Mr. Hecke, do not you and your farmer friends feel, in the light of this presentation of facts, that the farm laborers are carrying about their full share of this burden? In the first place, they are carrying quite the biggest half of the total burden imposed upon them by accident, and, in the second place, they are, by foregoing any compensation for the first two weeks, contributing almost half the average premium which the farmer pays for his insurance protection. And they are bearing the pain and suffering in the bargain.

If there be any fallacy in this presentation of the issue, I shall be glad to have Mr. Hecke, or some one else, point it out. A. J. PILLSBURY.

Chairman, Industrial Accident Commission.

San Francisco.

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AGRICULTURAL REVIEW.

Deciduous Fruits.

The fifth annual California apple show will be held this year at San Francisco, instead of at Watsonville as is customary. The dates for the show have been set between October 1 and 11, inclusive. It is planned to house the show in three or four immense tents.

The first extensive planting of avocadoes in San Diego county has just been planted near Del Mar by Oscar Maurer and Dr. Chas. W. Fisk. The trees were shipped from the nursery of W. A. Spinks near Monrovia.

A report from Porterville states that the cannery at that place will start canning peaches about July 10.

Green fruit shipments from Chico have about stopped for this year, a report from that place being to the effect that the early ripening of fruit in the East has made it unprofitable to longer continue shipments.

The cannery at Selma, Fresno county, has been shipping in apricots from Hemet since the local crop has been harvested.

Fred P. Roullard, horticutlural inspector of Fresno county, states that the prospects in that county are for normal crops of all fruits and grapes. Apricots are being picked and are of fine quality. Citrus trees are looking good, although Valencias are dropping some. Mildew is common in the vineyards, but is well under control through the sulphuring of vines which has been practiced extensively.

Carload shipments of plums have been going East from Lodi for some time past, although the growers are not receiving as good prices as they did at the same time last year. A car containing Early Crawford peaches, Tragedy, Climax, and Wickson plums left for the East last week.

According to reports from Fresno, the State Nurserymen's Association will offer their assistance in making the floral and horticultural exhibits at the Fresno District Fair better than they have been heretofore.

Peach growers in Tulare county are being advised to dry their crop, as prices for green fruit are low, buyers only offering $10 per ton for fresh peaches at the present time. Buyers are reported to be buying dried peaches in Fresno at 4 cents per pound, although few growers are willing to sell at that figure.

The peach crop in the Oroville section of Butte county is reported to be heavy at this time, and it is thought that harvesting will be commenced in about two weeks.

On an average of two carloads a day of green apples are being shipped from Marysville at this time. The principal shipping points are in Texas, although shipments are being made to all parts of the country.

The California Fruit Canners Association's plant at Hanford will start operations about July 12 on peaches. The cling peach crop in that section is said to be very good and is rapidly gaining the right color.

The American Pure Food Co. has purchased the property of the Fruit Products Co. at Lodi, and will open its factory for the manufacture of all kinds of fruit syrups, for soda fountains, etc., at an early date.

Through the efforts of the farm adviser of Yolo county, immediate steps will be taken by the Guinda farm bureau to eradicate the red spider, which has done considerable damage to almond orchards in that section recently.

Viticulture News.

In an effort to better the conditions of grape shippers, packers of green fruit in the San Joaquin valley have reached a satisfactory agreement with the directors of the California Green Fruit Association. This agreement provides that no grapes will be shipped out of the State testing less than 17% sugar. This agreement if carried out will insure the shipment of nothing but good grapes and will include Thompson Seedless, Malagas, and Muscats.

The Malaga crop on the Melvin vineyard, near Fresno, has been sold for $25,000 to A. Bronge. This is the largest Malaga shipping vineyard in the State.

The 1914 raisin prices have just been issued by the California Associated Raisin Co. The quotation is below 4c, which is somewhat lower than many of the outside packers had figured on, and the result will be that many of the outside packers will be hurt some during the fall. The carryover crop is said to be a little more than 20,000 tons, but packers claim that this will be practically cleaned up before the new crop comes on.

Citrus Notes.

Fumigation experiments, which are said to have been quite successful, have recently been carried out in Tulare county citrus groves.

According to advices from Oroville, the orange crop in that section will be light this year, as the crop is spotted. The condition is ascribed to the erratic blooming conditions that prevailed there this year.

Orange shipments from Riverside and Redlands were smaller last week than they have been for some months and indicate that shipments for this year are now about over.

Vegetables.

The first shipment of cantaloupes left Turlock last week and from now on daily shipments of both cantaloupes and watermelons will be made from that place. It is thought that a few patches of melons may suffer somewhat as a result of the lack of water due to the breaking of the Davis reservoir.

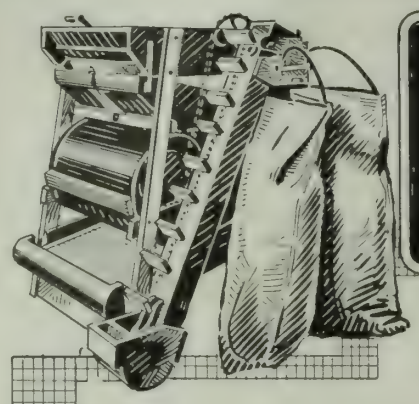
The Tulare County Growers' Association is taking steps to make it possible to run the Porterville cannery nine or ten months a year, and with that end in view expects to can tomatoes and rhubarb in the future.

Miscellaneous Happenings.

Crop prospects in the Wheatland district of Yuba county are very good. Messrs. Lanagan and Fouse report good progress in the development of their hop ranch near Wheatland. They have at present 82 acres of hops under cultivation, with prospects for a full crop at this time. Picking will commence during the first week in August.

A dispatch states that 55 South African farmers are to visit America in the near future to study agricultural practices in this country and especially the growing of fruit in California.

Owing to the favorable weather in



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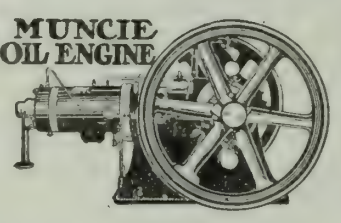

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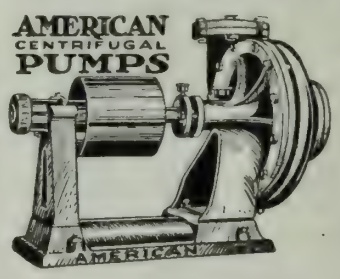

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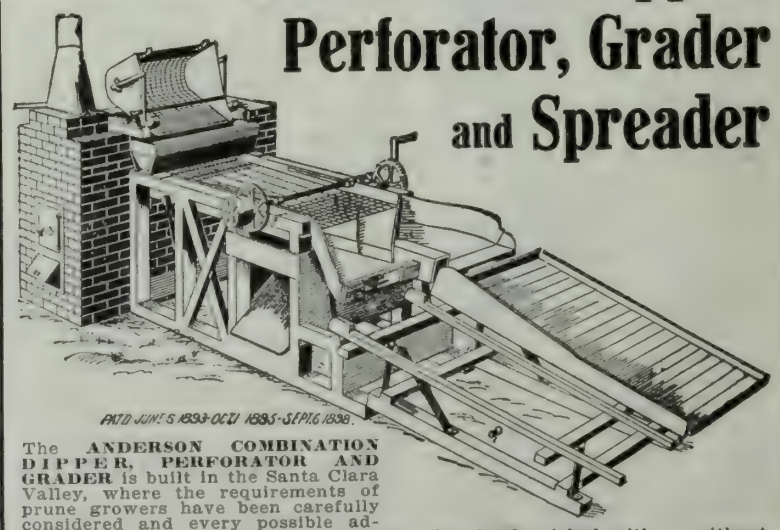

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the Klamath Falls district of Oregon this year, the cutting of alfalfa hay has started earlier than usual and good crops are reported to be the rule.

Excessive moisture and late rains have caused the weeds to grow very heavy on much of the grain land along the Sacramento river in some places, which is causing the harvesters some trouble in harvesting the crops.

Experiments in rice culture in Tulare county are proving very successful, according to advices from there. On one ranch there have been 212 acres planted which the owner says will run from 50 to 100 sacks to the acre.

The first shipments of Japanese corn received on the Pacific Coast arrived at Seattle July 1. The corn is said to be of good quality and is sold for about the same price that is received for Eastern corn.

According to F. D. Coburn, secretary of the Kansas State Agricultural Society, the wheat crop of that State will amount to 154,000,000 bushels this year, which is 60,000,000 bushels more than has ever been harvested in that State before. The report also says that there are 5,500,000 acres of corn planted and 1,470,000 acres of oats.

J. E. Inman, of Horncut, Yuba county, states that he has been very successful in growing Sudan grass on his ranch near that place, and that he believes that it will excel alfalfa.

Many turkeys are reported as being grown by farmers in Kings county. There are many insects this year, which is a great aid in raising turkeys.

A large number of pumping plants are being installed in Tulare county again this year, despite the fact that plenty of irrigation water has been available so far this season from the mountains.

The U. S. Department of Agriculture has recently been sent all of the farm records of Gen. John Bidwell, which will be compiled into book form by the Department at an early date.

Thousands of acres of Egyptian corn are said to be growing on the plains near Huron, Fresno county, this year. Both this crop and the other cereal crops now promise to be heavy, barley in some cases running 30 sacks to the acre.

Sugar beet growers of Alpaugh, Tulare county, recently pledged 2500 acres of beets for the next five years to the sugar factory at Visalia.

The Capay Almond Growers' Association recently voted funds for the erection of a warehouse. The members agreed to assess themselves ½c a pound on all nuts sold through the association. The building will be fireproof and will have the very best of equipment.

Olive Doings.

In all probability the olive crop around Corning, Tehama county, will equal that of last year in size at least, and it is predicted that the Heinz people will again pay as high as $200 per ton for the Mission variety. A great many acres of oil olives have been grafted over this year to the Mission variety, in order to secure the better prices which buyers are willing to pay.

Reports from Oroville state that the olive crop in Butte county will be large this year, unless something unforeseen happens between now and harvesting time. It is said that while the crop will be large, the fruit will not be small.

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DRAINING LAND IN NEVADA.

[Written for the PACIFIC RURAL PRESS by WM. GUTHRIE.]

Wherever irrigation is practiced there is apt to be some low land that is, or will be, ruined by water seeping down from the higher lands, making out of once good land, meadows of wild grasses, alkali or even tule patches.

On the George Peckham ranch, near Reno, Nevada, is a 28½ acre field on which is growing a fine crop of grain, that last year was nothing but a bed of tules that would, as one of Mr. Peckham's sons expressed it "bog down a saddle blanket."

The cost of reclaiming this piece of land, that is now considered the most valuable on the ranch, was in the neighborhood of $600 for labor and a small amount for lumber.

In draining this land a deep ditch was dug, two-thirds of the way across the lower edge of the field. Nine feet was the average depth, this bringing the bottom of the ditch down to strata of coarse gravel. In the bottom, a drain box made of 1¼x8 inch, pine lumber was laid. Mr. Peckham prefers a wooden drain box to concrete tile as it costs less and being down where it is continually wet will last for generations.

After laying the drain box the trench was filled, first with small stones so as to always maintain a free passageway for the water to seep into the box, then with the earth that was removed in digging. An outlet was secured by running the ditch down into a neighbor's irrigation ditch, several hundred yards distant.

While there are instances of this kind where fields may be drained by individuals, drainage can usually be more successfully done by co-operation among the different land owners, by digging a large drainage ditch, into which smaller lateral ditches may be run. Some land needs a different system of drainage than others.

Under Mr. Peckham's ranch lays a strata of coarse gravel, consequently a ditch will drain the land for a longer distance than if it did not have this gravel underneath.

In some instances it is better to put a ditch at the upper end of the field as Mr. Small, of Inyo county, did when he reclaimed something like 80 acres of swamp land near Bishop. This ditch caught the surplus irrigation water from the ranches above and prevented it from running across his land. Then with two or three cross ditches another worthless piece of land was made to grow good crops.

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Robinson: "Really! Who was the lucky man?"

Brown: "Jones — she married Smythe."

Sugar beet growers of Alpaugh, Tulare county, recently pledged 2500 acres of beets for the next five years to the sugar factory at Visalia.

Weight of Produce Containers.

To the Editor: I am growing vegetables on a small scale, here in the Sacramento valley, and being inexperienced do not know what is meant in your market quotations when you refer to crates, lug boxes, etc. Will you kindly tell me the amount of fruit and vegetables contained in the different kinds of containers?—Subscriber, Sacramento valley.

[The capacity of containers differ in the different markets of the State, and in the different sections where vegetables and fruit are grown. In the San Francisco market we find that cabbage for northern shipments is packed in crates that weigh about 200 pounds, while that for eastern shipment usually weigh about 170 pounds, although these weights vary, according to how solid the cabbage itself is. Cauliflower is sold in either one or two dozen crates. Green peas are sold at times in ventilated crates, weighing about 40 pounds.

There are two ways of selling tomatoes, the Mexican crate which holds four, 5 pound boxes, and the lug box, of which there are two sizes, one known as the Los Angeles lug, which weighs 30 pounds, and one called the Alameda lug, which holds 50 pounds.

The standard size apple box is used for rhubard in the northern markets, which holds about 40 pounds. Most of the asparagus is shipped into this market in what are known as Bolden Island lugs, which weigh 50 pounds. When shipped out of this market what are known as pyramids and flats are used.

Green corn is sold by the sack in this and most other markets. Dry onions are shipped in crates, from San Francisco, that weigh 100 pounds and green onions that are shipped into this market are packed in crates that hold 50 pounds. Sweet potatoes are usually shipped in crates that weigh from 100 to 110 pounds.

All kinds of berries shipped into the San Francisco market are in chests, which hold 20 drawers. These drawers may contain either two or six baskets. The chests received in other markets vary in size, some having 24 baskets, etc. Currants are shipped in chests which contain 12 drawers, each drawer holding about 10 pounds.

Apples are almost always shipped in 45 pound boxes. Apricots are sometimes shipped in crates and sometimes in lug boxes. Where shipped in the former they contain about 20 pounds and when in lugs about 40 pounds. Pears arrive in standard eastern pear boxes, which weigh about 40 pounds. Peaches arrive in crates and in baskets, the former weighing 20 pounds and the latter about 25 pounds.

Plums from the Sacramento river districts are usually shipped in 60 pound lug boxes while those from other sections are shipped in 20 pound crates. Cherries come in 10 pound boxes, and figs in 20 pound boxes. Table grapes are shipped in 20 pound crates and wine grapes in 60 pound lugs.

Cantaloupes from local sections around the bay arrive in 60 pound crates.

Oranges and lemons are shipped in standard oranges boxes.

Other fruit and produce not mentioned above is either sold by the pound, dozen or sack.—EDITOR.]

TUNNELING FOR WATER FROM PIT.

To the Editor: I have a 10 inch well, bored and cased 100 feet deep. The well borers stuck fast with the casing, at that depth, and broke the number 16 gauge casing in several places, gave up the job, and now it has nearly filled with silt. No rocks were found. Good water gravel was encountered, at 34 feet 4 inches, at 65 feet 8 inches, at 90 feet 3 inches, and at 106 feet 3 inches or more. The best wells in the valley yield only 400 gallons per minute, and I want more. I am advised to sink a dug well, say 5 feet by 6 feet to include the two upper stratas of gravel and, if found necessary, mine a tunnel at right angles to the vein of water gravel, so as to get all the water. Can you quote me the advice of your experts on the merits of this plan, and also, specifications of construction?—F. A. L., Oakland.

[ANSWERED BY E. P. MCMURTY OF KROGH MFG. CO.]

Referring to inquiry of F. A. L., of Oakland, wherein he asks for information as to the advisability of sinking a pit and running tunnels out into the water bearing stratas in order to increase his water supply we would not recommend that an attempt be made to increase the water supply with this method.

In the first place the cost of running these tunnels below the water line is very expensive and unless the character of the ground on each side of the water strata is of solid clay it would be necessary to curb these tunnels which if done with redwood would last but a short time and if of concrete would be very expensive.

The method of obtaining water by tunnels is usually employed where there is one strata only a short distance below the ground and a foot or two in thickness only or where the character of the water bearing strata is so close such a shale or sand only that although there is sufficient water in the strata it will not flow through to an ordinary well in sufficient quantity, hence the tunnel method is adopted which increases the perculating area and increases the supply.

The subscriber states that he may expect 400 gallons per minute from this one well, but wants more than this. Our recommendation would be that he sink a pit to the first water, drill one or more 10 inch wells 20 to 30 feet from his present well, run narrow tunnels, which in this case will be above the water line, out to these new wells and connect all of the wells to one vertical centrifugal pump placed in the pit. The cost of drilling additional 10 in. wells will be very slight compared to the cost if the tunnel method is adopted.

BLASTING BOTTOM OF WELL.

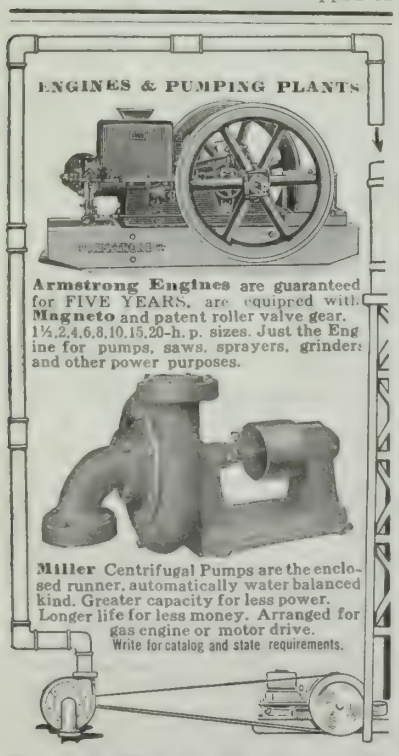
To the Editor: I am thinking of drilling some wells for irrigation purposes and have been advised that by using dynamite in the bottom of the well, so as to blast out quite a basin and then sand pump out all possible, that it will make a much better well. Is it so? How much dynamite should be used in a 50 foot hole?—F. W. W., San Luis Obispo.

[ANSWERED BY E. P. MCMURTRY OF THE KROGH MFG. CO., SAN FRANCISCO.]

Referring to the inquiry of F. W. W., regarding the advisability of dynamiting his well in order to increase the water supply of same, beg to advise that the method of dynamiting wells is used in some territories and by some well drillers, but when adopted there is grave danger of the irrigationist losing his entire well and generally no well driller will dynamite a well unless the owner first gives his permission and assumes all responsibility. We would certainly not recommend that a well be dynamited where the water bearing stratas are composed of ordinary water, gravel and sand. If such a condition exists and the subscriber wants to develop what is called an open bottom well, and he must want to develop a well of this kind when he speaks of dynamiting we advise that he end his well in the strata itself and not pass through the strata and land in the clay. If he lands the well in the strata he can develop the well with a centrifugal pump and have an open bottom well with a large cavity or reservoir at the bottom. In adopting this method there is, of course, a certain amount of danger in the gravel and sand flowing too fast and sanding the well.

If all the water will be obtained from a strata consisting of shale only, and the well does not supply sufficint water after test we would then recommend that he try dynamite. This you understand is recommended for a shale or a sand stone strata only.

The cannery at Turlock finished the season's pack of apricots July 3 with a total of 450 tons of fruit in 18 days. Peach packing will start about July 20, and it is thought that this year's crop will be far in excess of that of any previous year.



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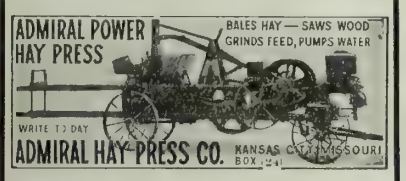

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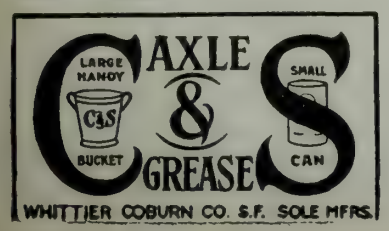

What Kind of Clover Is This?

To the Editor: I send you an article which I wrote for the Selma Irrigator, describing a new clover that seems to be very valuable to the San Joaquin valley farmers because it will grow in pastures composed mostly of Bermuda and salt grass. The University professors have prounounced it a variety of Trifolium Repens or European White Clover, but it is something new to this coast because the common Dutch White Clover does not succeed well with us.

A. M. Cox, living about 2½ miles southeast of Kingsburg has an alkali pasture of 30 acres of Bermuda and salt grass and one day he came in possession of some strange clover seed that was recommended as the proper thing with which to choke Bermuda grass to death, so he scattered his ounce of seed (2 or 3 seeds in each place) all over the 30 acres. That was 3 years ago, and since Mr. Cox has no pumping plant and he has to depend upon the Alta ditch for his irrigation water his clover did not get any too much water by any means. But it grew and flourished and choked the Bermuda grass apparently to death in many places. I saw it growing in water where Mr. Cox assured me it had been covered for 10 days, also on high knolls where water had never been from the ditch, also in the edge of the black alkali, in fact anywhere Bermuda grass or salt grass was growing even in the edge of the water in the ditch. This clover looks very much like eastern white clover, but the flowers have a pink appearance and it is more rank than any wild white clover I ever saw in Iowa where it grew profusely. Mr. Cox calls it the Dutch Norwegian clover and says that it has improved his pasture 200 per cent. All kinds of stock are fond of it and the poultry will eat no other green feed when they can get this clover. It is frost proof, being as green in January as in June, in fact it makes an all the year round pasture on alkali land hitherto suitable only to the growth of Bermuda and salt grass. It stands tramping by stock, close pasturing and flooding for irrigation in a first-class way.

Mr. Cox has no axe to grind and gives a sod each to all his visitors, wishing his neighbors and friends to share with him his good fortune. The writer received two pieces of sod which he has growing on the C. M. Davis ranch 2½ miles southwest of Selma. It is also found growing in many lawns in Selma, especially in the lawn of the Westside Grammar School where it can be seen driving the Bermuda grass out of business, also in the yard of Mrs. Bettie Cargile where they are harvesting the seed. It blooms 10 months in the year and the bees are continually visiting its blossoms in quest of honey.—O. S. Davis, Selma.

[This should surely be closely looked into and its source and botany definitely determined. There are better European White clovers than the Dutch. Mr. Etter has one in Humboldt county. We hope other readers of the Rural in the Selma district will look into the matter and write us of their conclusions.—Editor.]

Members of the Atwater Cured Fruit Association, in Merced county, have just received the final payments for last year's crop of dried peaches. The average price received by the members was 5 cents, as compared with 4½ cents, the price paid by other packers for the crop.

PRESERVING CANVAS AND TESTING MILK.

To the Editor: Please inform me what is the best kind of oil to soak cloth hose in, to preserve it and to keep it from leaking water. Which is the best kind of sulphuric acid to use for milk testing? If the hot water that is put in the bottle is not hot enough, does one get as good a test?—L. E. P., Santa Ana.

[For preserving canvas or cloth irrigation hose use boiled linseed oil, to which has been added a liberal amount of litharge, for drying purposes. Apply with an ordinary paint brush.

Sulphuric acid for milk testing should have a specific gravity of 1.825, should be almost as clear as water and should not contain foreign matter. The water for testing milk should be nearly boiling when the testing is started and it is much better if the tester is kept hot by steam pipes, while the testing is being done. This applies particularly to cream testing. —Editor.]

FRESH BEET PULP FEEDING PRACTICES.

[Written for the Pacific Rural Press]

A question which created considerable discussion in these columns some time ago was whether fresh beet pulp (not the dried kind) could be safely fed to dairy cattle and swine, if used judiciously.

Since that time we have visited two ranches that were successfully using the wet pulp, one for dairy cows and the other for hogs.

The Patterson Ranch Company, at Oxnard have been feeding the fresh pulp to their dairy herd for several years with good results, in fact this feed in connection with bean straw makes the dairy almost a by-product of their large bean and sugar beet ranch.

Fresh Pulp for Dairy Cows.—Being large employers of labor and thereby in need of large quantities of butter and milk, the dairy was started several years ago and at present consists of over 60 cows.

The ration being used after much experimenting is 16 to 20 pounds of wet pulp, 1¼ pounds of bran, 3½ pounds of bean straw, and 6 pounds of alfalfa hay per cow a day. By feeding the pulp in this way no evil effects are noticeable; the only stock not fed that way being the cows that are about to freshen, and the young calves. With the former the pulp was found to aid abortion and the latter are fed hay and bean straw until they are developed.

We were told that when fed almost entirely on wet pulp, the cows seemed to burn out quickly, the opinion of the manager being that the alcohol contained in the pulp caused this burning out process.

That no harm comes from the ration used is shown by the fact that many of the cows have been on the ranch for several years and as the herd averages almost a pound of butter a day the ration seems to be a good one.

Wet Beet Pulp for Hogs.—The experience of the Tagus Ranch Company near Tulare, with fresh pulp for hog feed, also seems to show that it has many virtues if properly used.

On this ranch the entire herd of 300 hogs was fed one pound of pulp per head a day all winter, and no ill effects were noticeable. On the contrary, the pulp seemed to greatly benefit the ration used and could very likely have been used in a more liberal manner without any danger.

Taken as a whole, these two examples seem to show that by feeding a nominal amount of wet pulp there is little danger, and as we were assured last fall there is no danger of feeding the dry pulp to any kind of stock.

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R. F. WILSON, 447 W. Main St., Stockton, Cal.

Veterinary Questions.

[Answered by Dr. E. J. Creely, San Francisco Veterinary College]

ABSCESS ON HORSES JAW.

To the Editor: About six weeks ago I had a valuabe horse, 12 years old, develop a swelling in his throat and left jaw. It gradually grew worse until I called a veterinary, and he called it strangles. He blistered the throat and jaws twice, about three days apart, and later poulticed with antithermolene. Several pints of pus were removed, including barley beards, so the veterinary concluded that it was barley beards, and not strangles that caused the trouble. The wound caused by the blister, which was as large as the crown of a hat, has healed over with the exception of a small place where saliva is discharged freely when the horse eats.

The liquid spurts out in a stream the size of a straw, especially when the horse is eating grain. Undoubtedly the duct carrying the saliva to the mouth has been severed, and it will not heal over while this discharge continues. Will you advise me what to do? —S. S. S., Rialto.

Your veterinarian made a mistake in diagnosis. A horse will contract strangles or colt distemper at any age. The abscess was caused from barley beards working up into the gland and has resulted in what is known as salivary fistula. The saliva will escape in great quantities while the animal is masticating the food.

This requires an operation to close the fistula and direct the saliva in its proper channel, into the mouth: when this is done by a qualified veterinarian the horse will be easily cured. In the meantime wash out the opening, twice daily, with Lysol water, teaspoonful to one quart of warm water.

CRACKS ON HOCK JOINT.

To the Editor: I have a mare that has the scratch, at least that is what they call it. It cracks open under the hock joint on both front feet, then it will scab over. At times it is so bad that it makes her lame. I have been washing it out every day with warm water and castile soap and have been applying Hall's Cream salve but it doesn't seem to do much good. Can you give me a remedy?—B. A. A., Lindsay.

Mix the following: Zinc Oxide, 4 ounces, Iodoform, ½ ounce, Glycerine, 2 ounces, Carbolic acid, 2 drachms, and apply twice daily after thoroughly washing with cresoleum water and castile soap. Remove every vestige of scab and hair from about the sores.

WRONG TEST FOR GARGET.

To the Editor: Kindly advise if the following method of testing for garget can be improved upon. We filter the whole milk four times and test each filter paper with Hydrogen Peroxide (H_2O_2) for effervescence of pus.

Your test for garget is worthless because Peroxide of Hydrogen will fuzz when brought in contact with other agents than pus.

OPENING IN TEATS.

To the Editor: I have a Jersey heifer which has an opening in one teat, about half way up, that discharges milk same as regular opening. It makes milking disagreeable as ends of fingers must be held over this opening while milking. She is ready to turn dry. While dry could opening be seared to make it grow up? How can it be done?—Old Subscriber, San Luis Obispo.

As soon as she becomes dry, the opening should be cut or scraped and brought together with a cat gut ligature. It is exceedingly hard while milk is being secreted.

HOME MADE EQUALIZERS.

[Written for the Pacific Rural Press by Forest W. Wood.]

The following methods of equalizing may be practiced by others than myself, although if so, I have never seen them and for that reason give them to Pacific Rural Press readers in detail, as I have found them very satisfactory.

To equalize 5 horses on a plow, take a piece of steel, 2½ x11/16x17 inches. Drill holes one inch from each end, large enough to weld ½ inch rings into. Drill hole for hook so as to divide distances into 6 and 9 inches. Work three horses on wheel and two on lead.

To equalize 6 horses take a piece of steel 2½x11/16x20 inches. Drill holes one inch from ends for ½ inch rings and a hole in the center for hook. Work three horses on the wheel and three on the lead.

On both of the above a flat hook should be used as a round one is apt to turn too much in the plow ring. The ring for wheelers should be twisted so as to allow the clevis for the thriple tree to lay flat. For the leaders a link and then a chain is best.

To equalize 7 horses get a piece of good hardwood 2x6x80 inches. Pine can be used, but is not nearly so good and when it is used the stick should be larger than the above. Ten inches should be allowed for each horse, measuring so as to work 2 horses against 5 horses, working 4 horses on the wheel and three on the lead. For the two wheelers and the 3 leaders that oppose each other, use a piece of steel ½x2x17 inches, with holes drilled so as to allow 9 inches for 2 horses and 6 inches for 3 horses. Rings should be used in each end. This should stand at right angles with the evener and be put on rigidly with strong clevices so as not to turn sideways.

There is a little side play on all of these equalizers, but the advantage far exceeds the disadvantage.

On the 7 horse equalizer it is usually necessary to set over as far as possible, and in some cases to alter the draft on the plow so as to set still further over. After the first day the team will work all right.

A handy rule to know when you break an evener and want another one quick, and one that applies to any number of horses abreast, is to allow 18 inches for each horse. For instance, for three horses, three times 18 or 54 inches; for five horses, five times 18 inches or 90 inches, and so on for any number you wish to work. For short single trees less can be allowed. The secret is one half the length of the single tree for each horse used.

A famous woman novelist was once asked why she had not married.

"I have three things about the house," she said, "which represent so closely the characteristics of the average man that I don't want any more of him."

"What do you mean?" her friend asked.

"Well," the novelist replied. "I've got a dog that growls all morning, a parrot that swears all afternoon, and a cat that stays out all night."

By using soapy water when making starch, the clothes will have a glossy appearance, and the irons will be less likely to stick.

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With the Live Stock Men.

In another column will be noticed the announcement of the dispersion sale of the Brown and Branden herd of Ayrshire cattle near Petaluma. This is the oldest and best known herd of Ayrshires in the State, and with the increasing popularity of the Ayrshire breed, should find a ready market. These with the grade cattle to be sold make one of the largest offerings of dairy cattle this year.

The board of directors of the State Agricultural Society recently elected Charles W. Paine secretary of the organization. They also passed a resolution allowing the University Farm to compete for prizes with their live stock at the State Fairs.

A report from Nevada states that hog cholera has been prevalent in the Carson valley and around Austin recently, and that some unknown disease is making inroads on the dairy cattle in the Carson valley.

The Iverson Corral de Tierra ranch, in Monterey county, has been sold by the Iverson heirs to Mrs. Jane C. Todd, who will devote the property to stock raising.

R. M. Dunlap writes that the Simon Newman company has purchased 9 head of registered Herefords from J. C. Whinnery, of Live Oak. These were all bred in Nebraska and are said to be a good lot. He also states that the company has sold a couple of young bulls to Thomas Ockenden, of Ockenden, California.

A case of rabies was found in Marin county by Samuel Watson, State Dairy Inspector, last week. The cases are said to be the result of bites by mad dogs.

The reduction in wool rates by the Interstate Commerce Commission will materially affect Western sheepmen, according to dispatches, and will compel railroads to refund considerable money on previous wool shipments.

The Marysville Creamery Co. has purchased the Yuba City Creamery and will combine the two into a larger plant at Marysville. Auto-trucks will be used in collecting the cream from the different points in Sutter county.

The Wilms Land & Cattle Co., W. Gabel and W. Bach, were shippers of seven carloads of beef cattle from Oakdale, Stanislaus county, last week. The cattle were reported as being in fine condition.

The Nevada State Fair will be held this year between September 21 and 26 at Reno. Pamphlets giving general information regarding the fair are being distributed by Secretary W. D. Phillips of Reno. The board of directors has set aside $5,000 for premiums this year. California breeders who showed at this fair last year were well pleased with the treatment accorded them and with the immense amount of live stock raised in Nevada this fair should prove a profitable field for all breeders.

Reports from Newman, Stanislaus county, are to the effect that sweet cream is at a premium in that place since the beginning of the hot weather, and that prices being paid are far better than the creameries are able to pay for butter-fat. That section is particularly favored in being able to reach such a large and profitable market as San Francisco. In years of cheap butter, the effect of such a market is more pronounced, and it would seem that dairymen in many other districts would find it profitable to so equip their dairies that they could sell whole milk or sweet cream.

The Gomez ranch, near Monterey, has recently been purchased by Mrs. L. J. Dobbins, who will erect modern dairy buildings and furnish the peninsula district with sweet milk. It is planned to make the plant strictly modern in every way and install a good herd of Holstein cattle.

Considerable Australian and Argentine beef is being imported, but the consumer is getting little benefit from tariff abolition. In four weeks Buenos Aires has loaded 112,000 quarters of beef for New York, and that port and Boston have received liberal supplies from antipodean sources.

One of the finest yearbooks so far received at this office is the one issued by the Ayrshire Breeders' Association, devoted to the publicity of the Ayrshire cow and to the advanced registry work of the association. The book shows that the association has made rapid progress and that the Ayrshire cow will, in the future, be a contender among the dairy breeds.

What is said to be the best bunch of cattle shipped so far this season from Livermore were three carloads of three-year-olds sold by M. C. Mulqueeney and the Flynn brothers. One lot brought an average price of $88.72 and the other $81.38.

Reports from Woodland state that B. H. Sharp, of that place, has recently patented a milk cooler that is being eagerly sought by several of the large manufacturing companies who handle dairy supplies.

The directors of the Fresno District Fair Association announce that $2500 will be given in prizes to live stock exhibitors. This in connection with the prizes for milking contests will make the fair well worth attending by all breeders. It is to be hoped that the directors will also make some improvements in the cattle barns and swine quarters, as the accommodations for such stock in the past have not been up to the standards set by other fair associations and considerable complaint has been heard among exhibitors.

George H. Ennis, of Riverside, purchased two lots of dairy cattle in Tulare county last week at extra fancy prices. For one lot of 16 head he paid $125 each, and for the other lot of 24 head he paid $130 each. Both herds were said to be exceptionally well bred which very likely accounts for the high prices received.

Several new members were added to the roster of the Stockmen's Protective Association at their meeting at Livermoore last week.

Reports from Grimes, Colusa county, state that sheep prices are high and that several bands of February sheep have recently been sold at prices ranging between $4 and $5 apiece. City butchers state that the supply of mutton is growing limited and that it will be only a short time until mutton prices will soar.

Sixty-three carloads of cattle, half of which was from California points, were received early in the week at the Portland Union Stock Yards last week. Several cars of fed stuff sold at $7.50, grass steers went at $7.25, cows at $6 to $6.25, spayed heifers at $6.75, and the price on bulls ranged from $4 to $4.25. There were fair receipts of swine for the week, the market remaining firm at $8 as a top price. The sheep market was active, with receipts climbing around the 9,000 mark for the five days. Top grades of both sheep and lambs were in good demand and prices were steady with last week. Top yearlings sold at $5, two-year-olds at $4.75, ewes at $4.25, and lambs at $6.

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INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

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The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.* Every bottle sold is warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
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Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly.
THE CUTTER LABORATORY, Berkeley, California.

Testing Cows for Tuberculosis.

To the Editor: Would you explain each step in the tuberculin test, giving amount of serum injected and time between each injection? Also the method of taking temperatures?—H. B., Fallon, Nevada.

The work of testing for tuberculosis has been and should be carried on by those having some knowledge of veterinary science, although any intelligent dairyman who will make a little effort to familiarize himself with the test and its limitations can use it on his own cattle with good results.

Bulletin 199 of the University of California gives the following directions for making the tuberculin test:

IDENTIFY THE ANIMALS.—Number them with paint or otherwise. It is not advisable for the beginner to attempt to test more than one string, 30 animals at a time.

TAKING THE NORMAL TEMPERATURES.—A convenient way is to take two temperatures, one at the morning milking and one in the evening, but it is preferable to take two more at two hour intervals from the others. The last one may just precede the injection of the tuberculin. Familiarize yourself with the reading of the clinical thermometer, and if trouble is experienced ask your druggist or doctor to show you how. The largest intervals on the scale are degrees, of which every second one only is numbered. The smaller intervals designate 2-10 of a degree. Readings can be made accurately to half of one of these smallest divisions. Insert the thermometer full length in the rectum. Smear the bulb of the instrument and the end of the index finger with vaseline to facilitate the operation. Attach the thermometer to the base of the tail by means of a snap, or a wire hook and a rubber band, and allow the thermometer to remain in the rectum three minutes. Be sure and shake down the mercury below 99°F. each time before inserting the thermometer in an animal.

TEMPERATURE OF CATTLE.—The usual normal temperature of a milk cow varies between 101°F. and 103°F., but it is not uncommon to find apparently healthy cows that temporarily are even lower or higher than these limits. Excitement may cause a temporary rise, excessive summer heat also increases the normal temperature, while the drinking of cold water may reduce the temperature a degree or two. Most cattle are at their lowest, early in the morning and highest in the afternoon. After exposure to a storm or during the severe north winds that sometimes occur in central California, the temperature of the cattle is frequently quite high. The temperature of calves under four months old is much more variable than that of older cattle.

On account of the case with which variations in temperatures are caused, it is important to keep the animals, that are being tested, under normal conditions. They should be fed, watered, and milked as usual. Avoid as much as possible the violent handling of nervous cows in taking their temperatures.

MAKING AN INJECTION.—This is preferably done in the evening, eight hours before the time of milking in the morning. The syringe should be disinfected by drawing it full of carbolic acid, emptying it, and then rinsing in boiled water before beginning the test. In addition to this, just before injecting each animal, dip the tip of the syringe in strong carbolic acid to disinfect it. Fill the syringe through the needle from the bottom of tuberculin and avoid contaminating it with dirt. Set the burr of the piston rod of the syringe so that not more than the dose intended can be injected. The large numbered divisions on the syringe piston rod stand for cubic centimeters, cc. The size of the dose will be stated on the tuberculin bottle. The injection is usually made in the side of the neck where the skin is thin and loose. A fold of the skin is taken in the left hand, and the syringe point inserted in the pocket thus formed and the dose injected.

TEMPERATURE AFTER INJECTION.—Take temperatures about the 8th, 10th, 12th, 14th, 16th, and 18th hours after injecting and continue in those cases showing a rise in temperature. Where an animal shows a rise above 102.5° F., it is well to take the temperatures at more frequent intervals. In hot weather it is essential that the injection be timed so that the 8th and 16th hours will occur in the cool part of the day.

INTERPRETATIONS OF THE TEMPERATURE RECORDS.—When the tuberculin is furnished by the University of California, the temperature record sheets may be returned as soon as the test is completed and an interpretation of the results will be made. In case of a reaction (indicating the presence of tuberculosis) there must be a rise of 1.5°F. or more above the normal temperature as determined on the preceding day. The interpretations of the temperature records showing a rise of less than 2°F. requires care. The elevation of temperature usually comes on gradually although in the more pronounced reactions, where the temperature goes above 105.5°F., the rise is frequently abrupt. This should usually occur between the 8th and 16th hours. It should remain practically at a maximum for two hours or more and gradually subside. When the temperature reaches 104°F. or more, and is maintained for some hours, the animal is certainly regarded as tubercular, if no fever was shown before the injection. Erratic elevations of short durations do not indicate a reaction. The slight variations caused by the weather, the drinking of cold water, or the irregular handling in applying the test are as apparent in the temperature records of the non-reacting cows as in the others, and a comparison of the temperatures of the animals which show no indication of a reaction should be taken into account in interpreting the records. In case of doubt the animal should be separated from the herd and re-tested not sooner than a month.

THE WORLD'S RECORD COW.

That the Guernsey cow will play an important part in the future history of high butter-fat production was recently demonstrated when the cow May Rilma 22761 broke the world's yearly record for butter-fat production by giving 19673 pounds of milk and 1073.41 pounds of butter-fat or the equivalent of 1260 pounds of butter, in 365 days.

This cow is owned by Capt. E. B. Cassatt, at his Chesterbrook Farm, Berwyn, Pennsylvania.

May Rilma 22761

Her work was carefully supervised by officials of the experiment stations, under the regulations of the Advanced Register of the American Guernsey Cattle Club. This in connection with tests made by seven outside institutions from as many different States has made the record entirely reliable and authentic.

The photograph on this page will give our readers an idea of the type and conformation of this remarkable cow that has set all dairydom to wondering what the final outcome of high record performances will be.

Hillcrest Stock Farm

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"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

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Rations for Dairy Cows.

To the Editor: Will you kindly tell me in your next issue what would be a balanced ration made up of the following ingredients and how much of this mixture should be given to cows giving 30 pounds milk per day; ground barley, linseed oil meal, heavy dairy bran, alfalfa meal, and steam dried beet pulp? I am now feeding a wet mash made up of these ingredients, but do not know whether I am using the right proportions. The cows, at present are having clover hay in addition to the mash, but later will only have grain hay. We have silo in the course of construction and corn growing, so hope to have silage later, but until then must make up a ration of what I have. Would it be better to add ground oats also. I would be very glad to know what the nutritive ratio of a ration for cows giving about 30 pounds of milk per day should be, then I could make a ration of whatever grains and mill feeds were available.—H. G. S., Willets, Cal.

ANSWER BY PROF. F. W. WOLL.

The best nutritive ratio for cows giving a certain amount of milk per day will vary according to the prices of the available feeding stuffs. If the protein feeds, like alfalfa and clover, are cheap compared with starchy feeds a narrower nutritive ratio may be fed to better advantage than when the opposite is true. With grain hay as the main roughage, it is necessary to feed more protein (flesh-forming substances) in the form of concentrates then if alfalfa or clover is fed; fortunately equally good results can, as a rule, be obtained in this way by furnishing somewhat more total digestable matter in the ration. A nutritive ratio of about 1:7 will be about right under these conditions and with average prices of the feeds given. It is not necessary to feed ground oats in addition to the other feeds, as these furnish ample variety to the ration.

I would suggest that about eight lbs. of concentrates be fed, with 20 lbs. of grain hay per head daily, and that the grain mixture be made up of barley, wheat bran, and dried beet pulp, in the proportion of 3:1:1, a small amount of oil meal (½ to 1 lb.) being added to increase the protein in the ration and as an appetizer. A ration made up as suggested, with 1 lb. of oil meal, will have a nutritive ratio of nearly 1:7 and will contain sufficient food materials to meet the needs of Holstein cows giving 30 lbs. of milk a day.

When corn silage is available, the roughage will contain still more starchy feeds and it will be necessary to supply more protein in the concentrates by feeding more bran or oil meal. The former feed would be likely to prove the cheaper source of protein of the two. The best combination of feeds to be given in each case depends largely on the relative market price of these. It is not possible to make a very satisfactory reply to an inquiry of this kind where this information is not furnished.

University Farm, Davis.

BEDDING OUT RANGE SHEEP

As a result of experiments during the past few years the department of agriculture is now advocating the use of the bedding-out system of herding sheep on open ranges, instead of the old close-herding system which has heretofore been in use.

This system gets its name from the fact that the herder who attends the band camps and beds his flocks wherever the sheep find themselves at nightfall. Under the old plan he established a fixed camp and bed-ground and drove the sheep back to the same place each night.

How the new system is regarded by the sheep owners is indicated by the following letter to the supervisor of the Tahoe National Forest, California:

"I am in favor of the 'blanket' or 'camping-out' system of sheep herding. I have always found the sheep and lambs in better condition when camped out, and in feeding the range in that way it will carry more sheep and it does not damage the range as when they are driven to one camp. I have always been very careful about feeding my summer range and I think, by the way I have had it fed, it is as good if not better than it was twenty years ago."

The author of this letter, according to local forest officers, is a very successful wool-grower, and the range which he uses under permit from the government is always in the best of condition, and yet is stocked with sheep to its fullest capacity.

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Poultry Items From Southern California.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

The Riverside Poultry Association is in a flourishing condition, it's members co-operate in buying most of the feed and many other necessities of the poultryman, buying in carload lots such things as shells and other commodities. They also have a contract with a milling company to furnish a mash that one of the members of the association gave the recipe for after much investigation and research. the mash as put up by the milling company has been found to give the very best results for laying hens of the small breeds, and these are the breeds mostly found on many of the big ranches.

I want to say they are doing things in Riverside, in the poultry business. Mr. Suits, the poultryman whose ranch and buildings were described, as Mr. Suits says, "so accurately" in a letter to the PRESS "that he could find the place blindfolded," is taking on new aspects. Since I was there a year or less than a year ago, two new houses as large as those described have been built, and about ten smaller houses added. Mr. Suits intends to carry 2500 hens. The pullets are now being raised that will fill that number and some to spare. All of the buildings on this ranch are good and substantially built, as the owner said, "I am in the poultry business for keeps and I like things right." Being a carpenter himself, of course, saves the cost of labor, though he has been so busy that he had to hire a man to help put up these new houses. One place we visited had all paper houses, built at cost of $6 each, so the owner informed us. These were good comfortable houses for roosting, having open fronts, and being built on runners, so that they could be moved from place to place. This ranch is run on the colony plan, the houses being placed in streets inclosed by a fence. There were some good ideas to be gained here, but some that could be greatly improved upon.

For instance, here are a large number of hens with houses ranging along, say six or seven hundred yards, and the hens are fed at one end of this street and watered at the other, the idea being that they distribute themselves more evenly in the roosting houses. To me, it looks like an awful lot of wasted energy, for a lot of hens to walk that distance for a drink. By all means the water should be piped all along the rows of houses, and feed right at hand. It has been my experience that if hens are confined to one house when they commence to lay, and there is some slight distinguishing mark given the house they will stick to it, unless it becomes foul with mites.

As there are several thousands of hens and young stock on this ranch, the colony plan is the best system to run it on, because the buildings are not heavy or cumbersome, but the best colony plan is either built on a stream or has a water system piped so as to be changeable when the houses are moved, and feed hoppers all along the row. Of course, there is a good sprinkling of fancier's among the poultry raisers in this section, and nearly all the breeds are represented, but the utility men run strongly to white Leghorns.

A goodly number of these are using the George brooder to raise the chicks, and while they are giving good results in general I think the capacity is a little overrated. Three hundred chicks will do better in one bunch than 600 in the same room, and when we double that and herd 1200 into one room and under one hover, it does not require much stress of the imagination to see how much better the 300 would pan out. Twelve hundred chicks consume barrels of air, and unless they can get it they are not doing the best possible for either themselves or owner.

All incubators and brooders are rather more overrated than underrated, because, naturally the inventor tries them out under ideal conditions and forgets to make allowance for neglect, and also for growth of chicks, a very important item, to both chick and owner.

The tendency is to minimize labor, everywhere, and this is all right to a certain degree. When it interferes with the health and growth of the chick, it is unprofitable.

I have tried brooding chicks in all ways, both ancient and modern, for the sole purpose of finding out which way was the best.

The closer we keep to natural law, especially in regard to numbers, is surely the best way. This does not mean that we are to go back to the hen or individual brooders with a capacity of 50 or a hundred, but it does mean that from 300 to 500 chicks in a lot will give better results than twice the amount in one lot. Mr. Norton, of this city has the brooding system, par excellence, that I have ever seen. A brooder house with a capacity for 3000 chicks, and yet so arranged that not more than 50 or 75 run in one lot and a feeder can walk along the alleyway and feed, just as fast as he wants to walk. This, I consider to be a grand system, but Mr. Norton is as modest about his brooding device as a housekeeper who makes a good cake for her family to enjoy. All he cares about is for his chicks to be well and healthy.

The death rate always runs lower in small flocks than in large ones, though even with hens we sometimes lose some.

We were told of one case at Riverside, that will act as an object lesson. A man bought 1000 chicks, putting them in one large brooder, where he lost nearly half of them. Then he ordered another thousand from the same breeder. When they were delivered he asked the breeder to tell him if he saw anything wrong as he wanted to raise all of those chicks. "Well," said the breeder, "you want to clean up this brooder, spray it well and turn it up to air well before putting these chicks in, then spade up your ground, clean up the floor and make it smell good." The brooder was in the condition the older chicks left it, and that fool man was going to put nice clean chicks into that dirty bed. What could he expect? Chicks are not made of cast iron. Of course his second lot of chicks commenced to die, but you could not blame the chicks. Ground where one lot has run is absolutely poisonous to your baby chicks, just as much so as if you put the stuff in the food box. Neglectful people are just as numerous as ever.

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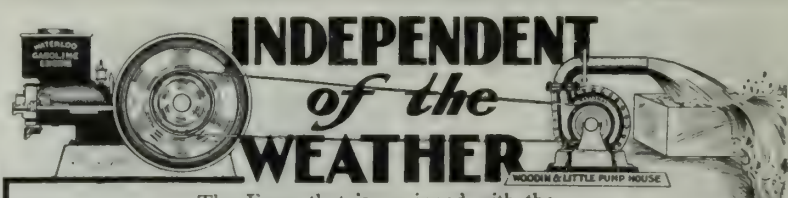

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but in the chicken business today they don't last long.

In the southland we have some few advantages that other localities do not have. As a rule our flocks are immune from roup, I have not in my two years residence in Pomona, seen a real case of roup. The Riverside poultrymen tell me that it is the same in that locality. No roup, or practically none, but this is the home of the insect pests, all of them. They visit in whole colonies when they come, not in one's or two's. But nobody appears to lose any sleep about them, they all keep a good spray pump and go at it systematically.

Alfalfa, is the chief article of green feed in Riverside, for both chicks and old fowls. There are several men engaged in hatching on a large scale and they all appear prosperous and it is safe to say that as a poultry center, all things considered, Riverside, the "Inland City Beautiful," is in a fair way to compete with any place, the right to be called the leading poultry center of the southland.

BREEDING 200-EGG HENS.

[Written for the PACIFIC RURAL PRESS]

An ambition seized Walter Hogan back in "York State" when in 1869 he observed eggs quoted at 50 cents per dozen. The ambition was to have a thousand hens to lay 50-cent eggs. That year he purchased in New York a carpet bag full of Leghorn eggs. The Leghorn was then a new breed and was recommended for high egg production. The experience with this first lot of eggs fixed more firmly the ambition to raise poultry. It was no trouble to raise hens, but the point was to make money from those hens.

Working from the basis that a 20-egg hen costs as much to feed as one that lays 120, he studied to learn the characters by which the heavy layers could be selected.

He figured that much time and feed could be saved if the heavy producer could be told early in life—but how was man to foretell the ability of a hen? How could the number of eggs any given hen was laying be determined?

The result of the study on this subject was a trap-nest. Every hen was trapped after she had laid her egg and held captive until that egg was recorded on her ledger account. Furthermore, she informed the bookkeeper of the very time of her laying. An old crowsfoot electric battery was so arranged that a bell was rung when the hen passed out of the nest into another compartment, opening the nest for another layer. This made it possible to prevent a hen from being cooped up for half a day.

But this system was lots of work. A busy poultryman couldn't afford to spend his time letting hens out of the nest and recording their production. Necessity spurred him on, and after the trap-nest records were summed up he studied the physical characters of the hens carefully. Some were killed and dissected. After examining hundreds, Mr. Hogan found that there were characters alike in all the heavy producers and in all the light producers. He selected some other hens with these characters that he thought would be heavy layers, trap-nested them, and found that his system worked. He selected more and tested them, until he finally found that he could determine within a few eggs the number any hen would lay in a year.

The natural result was an increase in the egg production of his flock—an increase because the poor layers were eliminated before they came to laying age. With the increase in egg production came a corresponding decrease in cost of feeding per dozen eggs produced. This encouraged more investigation which resulted in more elimination and more eggs until finally the trap nests were discarded entirely as being unnecessary.

But this system of selection includes not only the egg production, but also the ability of the flock to transmit this desirable character to their offspring. Pullets from some of the heavy layers were poor producers. Eggs from some of the pens under Mr. Hogan's early observations would not produce strong chicks. So the roosters were changed around from one pen to another, and the hatching qualities of the eggs were recorded. If these qualities for one pen were good with two different roosters, those roosters were put with other pens of poor hatching ability. If the eggs continued poor, the hens and roosters were examined for anatomical differences from those in the first pen, and the characteristics of the latter were noted as indicating strong transmission of heavy-laying ability. They were, of course, tested by Hogan and others by watching the production and hatching of selected hens and the records of their offspring.

This was the breeding-up process. Heavy layers were mated with roosters of heavy-laying strains, and the most of the chicks resulting were heavy layers.

"But the source of such stock must have been unusual," do you think? Not so. Here is the story of Mr. Hogan's experience in the Petaluma district:

He came to California in 1906, believing that he could develop 200-egg hens at Petaluma. He brought no chickens with him and no eggs.

"No normal hen can lay more than 120 eggs in a year," laughed the natives, not knowing that the 200-egg hen had already been produced. "A few monstrosities have laid 150, but a hen laying 200 is an impossibility."

When the adventurer purchased a farm on which three men had failed in the chicken business, the neighbors thought "there was another foolhardy sucker," for the little ranch seemed to be a hoodoo.

Many of those neighbors today would like to have a part of the reward for his foolhardiness. It is just the opposite of what they expected. Hogan proved that the farm was not a hoodoo, that Petaluma hens could be bred up to a production of 200 eggs per year, and that the poultry business could be made to pay much more than experienced poultrymen had supposed.

The principle is to eliminate all nonproducers and develop by careful breeding those that lay the most.

The start at Petaluma was made with a dozen hens selected from a flock of 300 near Santa Rosa. Those that were chosen had a bright, vigorous "temperament"; a large digestive capacity; the pelvic bones thin and wide apart. Other points were observed about the head, points which he had discovered on the high producers back in New York, points in which he believes as much as in human phrenology. These selected hens were at once mated with a rooster chosen for his ability to transmit the laying tendency. Hogan also selected hens and roosters for breeding pens in his neighbors' flocks, and bought the eggs for his two 50-egg incubators. Finally he had not only a good flock on his own ranch, but had the use of the best in several flocks near his own. His incubators at present have a capacity of over 18,000 eggs. The day-old chicks sell at $150 per 1000. His eggs bring 10 cents each for hatching, and what cockerels he has to spare bring prices varying according to the quality of the bird.

The experiences of Mr. Hogan show that it is possible to breed up a flock to a high egg production. They show that the careful and constant selection of the best and the elimination of the poorest, determined by a study of accurate records, is well worth all the extra time and expense involved.

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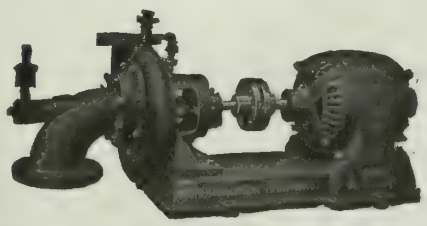

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The Home Circle.

Care of the Lawn and Flowers.

[Read at Country Life Club of Orangevale by Mrs. A. W. Hoge.]

While most people appreciate nicely arranged, well-kept grounds, many fail to realize that they can have them equally nice, and as one drives through the country he cannot help but notice the great need of improvement in the majority of home yards and surroundings. To be sure, a great many homes are unfavorably situated, with the house built on a hillside—built there, perhaps, with a view to having a spring of water near the house rather than a nice lawn; but even here much can be done to beautify the old home.

If the ground is rough, have it dug up and leveled, and while you are about it, put in an irrigating system. The best, I believe, are the kind you can turn on all over the lawn at once and so distributed that the whole will be watered at once and save using the hose. It is just as essential to have the lawn irrigated as any other part of the farm, if you live in the country.

If the soil is poor, have the ground covered with stable manure, bone-meal or commercial fertilizer, digging this in. When it is all smoothed off, sow lawn seed, blue grass and white clover, and be sure you buy your grass seed of a reliable dealer, or you may have all weeds, as I have seen before now. If possible, this should be done in February or March, so the grass will get a good start before hot weather comes. It must never get dry or the young grass roots will die. Of course you must have a lawn-mower if you are to have a lawn. If you already have a pretty good lawn, fill up the little hollows and rough places with dirt, a little at a time.

If one part of the yard is much higher than the other, or the fence is set on a bank, the fence may be removed and the bank graded down, filling up the lower part; then have the fence reset. Do not mind the sod that consequently will have to be torn up; sow grass seed and it will soon grass over. If your lawn is too small to permit flower beds, see if the fence cannot be set out, perhaps taking in some of the barnyard, lane or garden. If that makes the garden too small, set the garden fence out and take in some of the orchard or lot adjoining the garden. Do not be afraid of having the lawn too large. Why should they not be the pride of our country and village homes, where we have all the ground we wish?

Why not look around and see what improvements can be made and talk the matter over with the rest of the family? Keep the lawn question agitated and when the time comes you will accomplish what you have in view. It may be you have never thought any change could be made in your surroundings. If you will make it a study you will be surprised to find what improvements can be made. Remove all the unsightly objects from within and around the yard. Trim up the trees. If locust trees are in the yard, have them taken out, root and all. You can never have a nice lawn with locust trees—they are always dropping something to make a litter. They may be all the shade you have, and you will be loth to give them up, but plant soft maple or some other quick-growing shade trees in their place and you will soon have a nice shade. Plant fruit trees if preferred, though of slower growth than maples in this country, they are very good for shade, and where ground is scarce you have the fruit.

It does not look well to see the weeds as high as the fence on the outside of the lawn. Insist on having these cut or dug out, root and all. There are usually plenty of days that are not so full of work but that the men can find time to cut the weeds about the premises.

You will want some flower beds made. You say: "We cannot get the men to make them for us." No, I do not suppose you can; do not ask them. Most women have a little money of their own—chicken and egg money. Do not spend it all on groceries and provisions and house furnishings. The groceries will be forthcoming. The men will have their coffee and sugar if they do not make the flower beds. You may contemplate buying a new carpet, a piece of furniture, or having some papering done in the spring which would cost five, ten, or twenty-five dollars. Take that money and spend it in beautifying the lawn. If you live on a public road, fifty people see the surroundings of your home where there is one that sees the inside.

Some people say they cannot have flowers on account of the chickens. That is a poor excuse. If you live on a farm it is indeed too bad there is not room outside the yard for the chickens. You cannot expect to grow flowers and chickens in the same space. Raise the little chickens farther from the house and train the dog to drive the old ones out of the yard; he will get so proficient that he will not allow a chicken on the lawn. You will also have to train him to keep off the flower beds. He will soon learn and know that they are forbidden ground and not for him to walk on.

As you must have your flower beds made, get a man that works by the day, or if there is a man hired by the month on the farm, set him at the flower bed, which you have already marked off. Select a place not too near trees, or it will be shaded too much. Shade during part of the day, however, will do no harm, but if geraniums are to be planted in this bed, they will do better and bloom more profusely if in the sunshine all day. Mark off a plot ten or twelve feet in diameter, if it is to be a round bed; or if along a fence, four to five feet wide. You must superintendent the work yourself. Have the top soil dug up and shoveled to one side, then dig down a foot or more. If the soil is hard and poor, take it out and wheel away, filling up some low place in the yard. Then replace the top soil which has been laid aside and fill in with good soil and rotted manure. If the soil lacks sand, add a load, and have all this thoroughly mixed.

Do not have the bed raised much above the level—just ovaled up to the center; and above all, do not edge around with brick, stone or bottles, as it does not need anything around it. Fill this bed with geraniums, gladiolus, and heliotrope, and edge with sweet alyssum, or plant any kind of flowers you may wish; but nothing will make a finer show than scarlet geraniums. You will find the home men will become interested in the lawn and flowers and will often volunteer a helping hand. They admire flowers more than you think. "You have the finest bed of flowers I ever saw," is the expression I have heard from men whose lawns were destitute of flowers save a few shrubs, and very often ask how we get them to bloom so fine.

Plant tulips in the fall, taking them up after blooming time, and plant as directed above or plant hardy perennials, of which there are many kinds to choose from.

After flower beds are once made, all you need do is to have them covered with rotted manure every spring and then hire the man again to spade them just as deep as the spade will go, turning in the manure. Most flowers like a deep, rich soil, and pay well for the extra fertilizer given them. If you have no geraniums or other plants to start with, go to the greenhouse or send to some reliable florist and get a dozen or two. Do not ask your friends for cuttings in the spring after they have cared for their plants all winter. They will gladly give you cuttings next August. Geranium cuttings are very easily rooted, but must be started before cool fall weather. I always feel sorry when my friends ask for cuttings after

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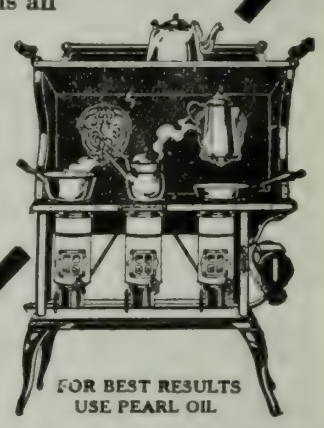

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August, as I fear they will be disappointed in them; they may start, but will not get sufficient root to take them through the winter. I find the best way to start geranium slips is in shallow boxes. Fill with good soil, wet, and let stand a half day or so before setting in the cuttings, then place them three inches apart, pressing the dirt around them, and leave in the shade for two or three days, then set the boxes right out in the hot sun, keeping them there until danger of frost is past, never allowing the soil to become dry. You will have a fine lot of plants to bed out next summer. I winter most of mine in these boxes, but you can pot them in tin cans or five-inch pots. Take a deep dish or half-gallon crock, fill with pounded, sifted sand. Sandstone that has been burned is soft and easy to pound. Wet the sand very wet and set your slips in, quite close together; keep the dish where it will be warm, and if possible where it will get the sunshine. The kitchen window is a good place. Be sure and never allow the sand to become dry, or it will be fatal to your cuttings; you cannot keep the soil too wet. In a month or less time, if you will take a fork and lift one of the cuttings out, you will find it is nicely rooted. You can then pot the plants in light soil, and by the time you are ready to set out your beds you will have thrifty little plants. I usually start my sand dishes in March. This is the best way to start all kinds of cuttings in the spring. They root very quickly if kept warm and wet. If you want a few annuals, procure the seeds from a good florist. The much advertised cheap ones are not always the best or most satisfactory. Sow the seed in shallow boxes of fine dirt which has been heated to kill weed seed and insects. If sown the last of March the plants will be ready to set in the beds the last of May.

Hardy plants that remain in the ground iyear after year should be set in a bed by themselves. If you have plenty of these with some shrubbery, your garden will never be without flowers.

Other things that add a great deal of beauty to the home are vines and hanging baskets. They have an attractive beauty all their own. Have the porches shaded with vines if you please. They will be delightful on hot days.

Do not be afraid to cut your bloom. You can have flowers on the table at each meal and give away great bunches of them besides. By the way, that is one of the greatest secrets in flower culture: do not be stingy of them. The more you gather the more they will bloom. Send flowers to the sick and to those whose circumstances are such that they cannot have flowers. Take flowers to the church and cemetery; let the children take them to the schoolroom. I think I will be safe in saying that we have gathered as many as a wagon load of flowers from our beds in one summer.

That is one of the great pleasures in flower growing: it is not all hard work and drudgery, as some people think. Yet a person who does not like to work will never make a success at it. Some people look at our lawn and flowers and say that it must take a vast amount of work and think they never could do it. Then again, others think it just grows that way, and we have been asked how we found the time to do it.

Bring up the boys and girls to help with the flowers and lawn. Cultivate in them a taste for the beautiful, and not many milestones of the twentieth century will have passed ere every home will have a well-kept lawn and flowers. If all the work cannot be accomplished at once, do it little by little, and you will in time have beautiful homes that will be admired by everybody.

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Beware of the "Lyco!"

On the gate of the garden belonging to the editor of a well-known horticultural paper there is affixed this notice: "Beware of the Lycopodium!"

This big metal notice was placed there in order to frighten away flower thieves. It was so successful that it deterred everybody, and the tradespeople refused point-blank to risk their lives; they would sooner lose custom.

Various guesses were hazarded as to the identify of the "Lyco," as it is called in the neighborhood. Some declared it to be a wolf, a snake like a boa constrictor, a sort of hyena, a stinging toad, an Abyssinian lion, a jaguar, a savage vulture, a mandril, and a blood-sucking vampire.

It became necessary to inform the tradespeople that it was kept confined during the day and was only roaming about at night. One day a man called with a load of manure for the editorial garden, and he was very "nervy" about the notice.

Although he was reassured, he looked about apprehensively all the time. When he had brought in his last load and was bending down, the editorial cat, a large Persian, playfully leapt on his back, and, shrieking horribly, the man fled—likewise the cat.

As a matter of fact, lycopodium is the name of a tiny moss that grows on the rockery near the garden gate.

Then He Changed His Tune.

"Music," said the eminent pianist, as the reporter to whom he had kindly accorded an interview ran his pencil rapidly over the paper, "is the most elevating of sciences. It refines the sensibilities and enlarges the heart. It—what were you about to ask?"

"I should like to know, sir, how you regard the distinguished pianist, Professor von Bergstein, as a musician?"

"He is nothing, sir, but a cheap, vile imitator; a base counterfeit, a tenth-rate key-board banger, sir!" exclaimed the eminent musician, scowling.

Our Young Folks

'Twixt Wall and Bush.

WHEN A SPIDER WOVE HER WEB AND FOUND HER FATE.

No man had ever gone so far as to call her a beauty, and only one mere male had dared to endeavor to share her affections.

But he died suddenly. She killed him, and rumor hath it that she ate him afterward, but of that there is no proof.

The apple trees were standing in the pale wonder of their own cast-off bridal veils of blossom, and the young leaves were just ceasing to be sticky and yellowy, wonderfully beautiful, when she appeared.

It was no small wonder that she had so far got through life, dodging her brothers and sisters, and eating those who would have eaten her.

FAT AND FORBIDDING.—She had avoided being food for an ichneumon fly grub, escaped her own mother's jaws, failed to perish by deluge, bird, thirst, or cold when launching out from a railing-top on her own home-made avion; and now, having selected a corner of the world for herself, had successfully moulted her skin and struggled free.

But she was soft and weak and helpless, and surrounded by foes on every hand, and she must go into retirement swiftly for a day or two, till her new coat hardened.

Forthwith, then, she crawled into the crack in the old wall, and was no more seen for a day or two, fasting the while from necessity.

When at last she came out, you behold her as a fine, fat, female garden spider, greyish, rotund, and forbidding, bearing upon her back the caste mark of her species, a small white cross, that all might know, and many take warning at, who she was.

Then she began to work, and—ceased to be commonplace.

WHEN DANGER THREATENS.—From her spinnerets—where her tail should have been—she spun out a thread of silk, anchored it to the wall, and—fell like a dropped shot to the ground on it.

Still carrying and paying out her silken line, she crawled to the bottom of a handy bush, meeting on her way an ant, whom she ran into, because apparently she was nearly blind, or pretended to be, and nearly abolished.

Next she climbed up the bush, ran into a greenfly on the way, slew it calmly, and, having finished with the corpse, passed on to the end of a twig. Here she pulled in the slack of her line and made all fast. Thus she had a taut cable 'twixt wall and bush.

A bird interviewed her, and would have gobbled her up, had she not dropped like a dead thing on another line half way to the ground, and not climbed back again till the danger was past.

Her next move was to walk backward and forward over her tight-rope half a dozen times, paying out line all the while, and making the strand six thick.

Then from the twig to another higher up she repeated the process, and from that twig back to the wall, and thence down to her original standing-place. Thus she had formed a rough square of many-times-thick very strong lines.

AWAITING THE FLY.—She then very quickly spun straight lines from various points of the square to the center, as it were a wheel, and, just where the hub would be, she connected these "spokes" together with little separate lines. None of these lines so far spun was sticky.

At this juncture a brilliant, metallic hued, sand wasp shot up from nowhere, and, seizing her, tried to jerk her off her line to the ground, to sting and carry her off to its own horrible larder. But the surprise attack failed; the spider hung on and bit, and the wasp skipped buzzing way to try elsewhere.

Five minutes our spider took to get over that fright, and then, starting at her web a little way outside the "hub" she began to spin a spiral line, round and round from spoke to spoke, till she reached the outer edge. And this was sticky, so sticky that it would catch her if she wasn't careful.

Then, taking a line down as "telephone line," she spun herself a retreat on the wall, and waited for something to fly into her net.

The web was complete.

Three minutes later a passing cow had brushed it all away, and—the spider was curled up lifeless in the beak of a tomtit.

That's Fate.

"Every time I see grandfather's sword I want to go to war."

"Well?"

"But every time I notice grandfather's wooden leg I cool down."

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THE MARKETS.

San Francisco, July 8, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Prices for new crop wheat have not been very definitely established, and the Northern market has been a little easy for the last week, though local prices are firmly held on the former basis. There is a fair demand here in a jobbing way, with no large amount offered.

California Club, ctl....	$1.57½@1.62½
Forty-fold	1.60 @1.65
Northern Club	1.57½@1.62½
Northern Bluestem ...	1.62½@1.65
Northern Red	1.52½@1.60

BARLEY.

Trading is quiet, both in spot and future barley, with buyers and sellers disagreeing as to values. There is not much coming into this market, but buyers are operating in a small way. Considerable shipping and brewing business is being done, however, at interior points.

Brewing and Shipping.	$1.00 @1.02½
Choice Feed, per ctl...	$0.92½@0.97½
Common Feed	Nominal

OATS.

Offerings are not very large at present, but the demand has been light for some time, and there is a rather easy feeling as to values, though prices are not quotably lower.

Red Feed	$1.10 @1.20
Gray	Nominal
White	1.25 @1.30
Black Seed	Nominal

CORN.

Eastern corn is still in scant supply here, and while the demand is not very active, prices are firmly held at the old level. Offerings from the Orient receive comparatively little attention.

California Yellow	Nominal
Eastern Yellow	$1.80 @1.85
Eastern White	Nominal
Egyptian	1.80 @1.85
Milo Maize	1.80 @1.85

RYE.

Canadian rye is held steadily at the outside figure, but there is not much demand for it, and the cheaper offerings are entirely neglected.

Rye, per ctl.	$1.50 @1.60

BEANS.

The bean situation shows practically no change, as far as spot business is concerned. Stocks are pretty well sold out, and there is consequently no very large movement; while the demand in consuming markets has not been sufficient to warrant any further advance. Limas, however, are extremely firm, and it is impossible to get any at the inside figure formerly quoted. Conditions affecting the coming crop are, for the most part, favorable.

(On wharf.)

Bayos: Cal., per ctl....	$7.00 @7.50
Mexican	4.50 @5.00
Blackeyes	7.75 @8.00
Cranberry Beans	4.25 @6.00
Horse Beans	1.90 @2.15
Small Whites	5.00 @5.25
Large Whites	3.90 @4.50
Limas	6.85
Pea	4.25 @4.50
Pink	3.75 @4.00
Red Kidneys	Nominal
Mexican Red	6.00 @6.25

SEEDS.

There is no movement of any consequence in this line at present, prices for all descriptions remaining nominally as before.

Alfalfa	12½@15 c
Brown Mustard, per lb....	3¾c
Canary	7 @ 7½c
Hemp	2½@ 3 c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Current business is rather light, and values show no change.

Cal. Family Extras....	$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY (New Crop).

Offerings in the local market still show a gradual increase, and now consist mostly of the new crop, for which quotations appear below. Most of the new hay so far received is of medium to poor quality. Strictly fancy hay, in light bales, is very scarce, but dealers are not quoting over $12 for it at present. There is no large buying movement here, as consumers do not believe there is any immediate prospect of prices stiffening, and hope to get some further concessions later in the season. Holders in the country show increasing anxiety to sell, but are not satisfied with the prices offered; while buyers in the country are working in a very small way. Arrivals of alfalfa have been light of late, but the demand is limited to immediate needs, which are not large. California hay is to be tried again by the Government for use in the Philippines, and this may furnish an outlet for a considerable quantity. A good buying movement is also expected in Nevada, where stockmen are figuring on taking a large quantity at the present low prices.

No. 1 Wheat, or Wheat and Oats	$ 9.00@10.00
do No. 2	7.00@ 8.50
Barley	6.00@ 8.00
Tame Oats	7.00@11.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.00
Stock Hay	5.00@ 6.00
Straw, per bale	40@ 50c

FEEDSTUFFS.

The demand for most lines is very light. Some of the larger consumers figure that alfalfa hay can be substituted to a large extent for mill feeds, a practice which is highly attractive under present conditions. Supplies of bran, shorts and middlings, however, are light.

Alfalfa Meal, per ton....	$17.00@18.00
Bran, per ton.....	25.00@26.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal..	26.00@27.00
Cracked Corn	41.00@42.00
Middlings	32.00@34.00
Rolled Barley	21.50@22.00
Rolled Oats	28.00@29.00
Shorts	26.00@27.00

Garden Truck.

VEGETABLES.

The local vegetable trade has been rather sluggish all week, and as most descriptions are in liberal supply, prices show little firmness. Tomatoes are now among the most important features of the market, with large arrivals from several quarters, and while prices for river and valley stock are a little lower, the quality of the offerings brings a very fair demand. Green corn is also plentiful, and the top price has been reduced a little. Asparagus is held a little higher, with arrivals beginning to diminish. Cucumbers and green peppers are now coming in freely in lug boxes, and are rather easy as to value. String beans are lower, while limas and peas hold steady at the old figures.

Cabbage, per ctl.....	$ 1.00@ 1.25
Cauliflower, dozen	40@ 70c
Green Peppers, lugs.....	75@ 85c
Carrots, per sack.....	35@ 50c
Green Peas, lb.	2@ 3c
Tomatoes: Southern, crate	25@ 40c
Delta, lugs	75c@ 1.25
Beans: Wax	1@ 3c
String	1@ 3c
Rhubarb, box	60c@ 1.00
Asparagus, box	1.00@ 1.25
Cucumbers, lugs	75c@ 1.00
Eggplant, lb.	6@ 7c
Green corn, sack	75c@ 1.50
Lima beans, lb	5@ 6c

POTATOES AND ONIONS.

Arrivals of both potatoes and onions from the river district are large, but there is a good shipping demand, and values are decidedly well maintained, with no excessive offerings.

Potatoes:	
River Burbanks	$ 1.00 @1.50
New Potatoes, lb.....	1¼@ 2c
Oregon Burbanks	75c@$1.25
Sweet Potatoes, per ctl...	2.50@ 2.75
Onions: Bermuda, crate..	2.00@ 2.25
New Red, ctl.....	2.00@ 2.25
Garlic, new, per lb.....	5@ 8c

Dairy Produce.

POULTRY.

The demand has picked up a little, and while supplies in most lines are ample, prices for young local stock show some improvement.

Large Broilers	19 @20 c
Small Broilers, per lb...	19 @20 c
Fryers, per lb.....	20 c
Hens, extra, per lb.....	17 @18 c
Hens, large, per lb.....	17 c
Small Hens, per lb.....	15 @16 c
Young Roosters, per lb..	22 @23 c
Squabs, per doz.	1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	6.50@ 8.00

BUTTER.

Local trading has been more active than for some time past, and all offerings have been readily absorbed, with a slight advance in extras. Some Eastern stock has appeared lately.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	24	24½	—	24½	24½	24½
Prime Firsts ..	23	23	—	23	23	23
Firsts	23	23	—	23	23	23

EGGS.

Extras have taken an upward turn again, with a larger buying movement than for some time past, and it is expected that prices will be on a little higher level than last month. Extras have gone up 2½c in the week with a slight advance in firsts and pullets. A good-sized shipment of Chinese eggs has just arrived.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	24	24½	—	25	25½	26½
Firsts	22½	22½	—	22½	23½	24
Selected Pullets...	21	21	—	22	22½	23

CHEESE.

With a lively demand, Y. A.'s have gone up a cent in the last week, and Monterey cheese is also a little higher, flats being as before.

Fancy California Flats, per lb...	12½c
New Young Americas, fancy.....	15½c
Monterey Cheese	14 @15 c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter: Extras..	25	25	25	—	25	25
Eggs	26	25	26	—	26	26
Cal. Cheese: Flats ..	12½	12½	12½	—	12½	12½

Deciduous Fruit.

There is a fairly good movement in the local market, but supplies in many lines are rather in excess of the demand, and some difficulty is occasionally experienced in cleaning up the arrivals. Strawberries are a little firmer this week, and loganberries are also higher, while blackberries and raspberries are lower, offerings being of rather poor quality. The supply of apples has increased rapidly, and so far receive little attention, while prices have been reduced in the effort to bring a better movement. Apricots show a further decline, but choice lots find ready sale at fair prices. Peaches stand about as before, and pears are firm, with a strong shipping and canning demand. Fig prices are a little higher, though offerings are large and include much unattractive stock. Cantaloupes are quoted as before, but it is hard to clean up the arrivals at this level, as shipments are coming from several quarters, and the demand is nothing extra. Grapes are slightly lower, but are not yet much of a feature.

Blackberries, chest	$ 2.00@ 3.00
Loganberries, chest	2.00@ 5.00
Raspberries, chest	3.50@ 5.00
Gooseberries, lb.	5@ 6c
Strawberries:	
Malindas, chest	2.25@ 3.50
Banner, chest	2.25@ 3.50
Longworth	2.50@ 4.00
Apples, New Crop:	
Astrakhans, box	50c@ 1.00
Alexanders	50c@ 1.00
Gravenstein	50c@ 1.25
Crabapples	50c@ 1.00
Apricots, crate	50@ 75c
do lugs	75c@ 1.25
Pears, box	75c@ 1.50
Peaches, crate	60@ 75c
do lugs	1.00@ 1.40
Plums, crate	40@ 65c
do lugs	50c
Figs, white, single layer..	50@ 75c
Figs, black, do.....	65@ 75c
Cantaloupes, crate	1.25@ 1.50
Watermelons, lb.	1¼@ 1½c
Grapes, crate	1.25@ 1.50
do lugs	2.00

Dried Fruits.

The general range of prices stands about as before. Business is still reported quiet, but a good many scattered sales are being made to the East and Middle West, and buyers in the country are picking up considerable fruit at the range quoted. Efforts are being made in some quarters to get prices down, but with very little success, as it is certain that there will be no excessive output in any line of fruit. Peaches appear weaker than anything else, and buyers have tried to take advantage of the slump in green peaches to get concessions, but it is practically impossible, in the leading districts, to get anything below 4½c. The new crop is now being dried, and there is considerable uncertainty about the output, as recent hot weather has done considerable damage. While prunes and apricots seem to be doing a little better than was expected, both lines continue very firm. The new prices on August-September raisins have not been very favorably received, but the situation is closely controlled by the Associated. Hot weather has caused some curtailment of the new crop. The New York Journal of Commerce says:

"In California prunes for forward shipment the movement is light, but there is no pressure to sell, and the market is steady on the basis of previous quotations, which were 5½c as inside for 40s to 60s for October and from that up to 6c, as to packer. There seems to be little demand, as most Eastern buyers look upon prices quoted as too high.

"In apricots and peaches, the situation shows little change. Buyers here are placing few if any orders at present, as they look for more favorable prices later, but at present sellers are not disposed to make concessions.

"According to current report, orders for a good many cars of California raisins were put up to the Coast as soon as the Associated Company prices on August-September shipment were announced, but in all cases the buyers looked for special discounts, and as sellers were unwilling to make them, no business was put through. As near as could be learned, every order for seeded or loose Muscatels at any concession from regular prices and terms was turned down by the packers."

Evap. Apples, 1914.....	Nominal
Apricots, 1914	9 @ 9½c
Figs: White, 1914	3¼c
Black	Nominal
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	5¾@ 6½c
Peaches, old and new.....	4 @ 4½c
Pears	8 @ 9 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@ 4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

With practically everything but Valencias cleaned up, the prospects for that variety of oranges in the Eastern markets looks better than they have for some time. One thing that should not be lost sight of by those growers who have complained some of the prevailing prices, is the fact that the crop this year is almost 50% more than it was last year, and that as good prices cannot be expected during the month of July as earlier in the year when there is practically no other fruit in competition. With the large crop and the short period in which it may be marketed, care should be given to the proper distribution of the Valencia crop.

The lemon markets were dull last week on account of the large importations of poor foreign stock, some of which sold for as low as 50c a box, which had a very depressing effect on the Eastern auctions. In the West

the markets were not improved on account of the cool weather.

The markets in all of the principal Eastern cities were firm to higher on July 6, at which time 17 carloads of Valencias sold on the New York auction for an average price of $2.10 to $3.90, and one car of lemons sold for an average of from $2.65 to $3.70. Valencias sold in Philadelphia on that day for an average of $1.95 to $3.05. Lemons on the St. Louis market ranged around $3.15 to $3.40.

The only quotable change in the San Francisco market is a sharp drop in limes. Lemons are rather easy, in sympathy with the cut at primary points, but are quoted about the same as last week. Oranges are moving only in a limited way.

Oranges: Navels, box	$ 1.25@ 2.50
Valencias, box	1.75@ 2.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.50@ 2.50
Lemons, box	2.75@ 5.50
Limes, case	4.00@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

The nut market is dull, with nothing offered from first hands, and little interest is shown by the trade at present, though new prices are expected before long.

Almonds, 1914 crop:	
Nonpareils	17 c
I X L	16 c
Ne Plus Ultra	15 c
Drakes	13 c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

Prices are pretty well maintained in this market, notwithstanding the fact that there is a large supply and no urgent demand. There is a good shipping movement from primary points, but the output is large and is not expected to clean up for some time.

Comb: White	12 @13 c
Amber	10 @11 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

Local supplies have been pretty well cleaned up, and all new offerings find a good demand at the old prices.

Light	31 @32½c
Dark	30 c

HOPS.

Business is still dragging, neither buyers nor sellers showing any desire to close new contracts. Values have been rather easy, with few offers over 14c, but there is not enough movement to establish prices very definitely. The Sonoma crop is said to be looking better, but it will be below normal.

1913 crop	15 @17½c
1914 crop	14 @15½c

Live Stock.

Sales of live stock through the country continue rather large, and shipments of cattle to the city markets are increasing a little, though most of the sales appear to be for feeding purposes. The local situation shows little change.

Steers: No. 1	7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5¾@ 6 c
Bulls and Stags	3½@ 4½c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¾c
100 to 150 lbs	8½c
Prime Wethers	5¾@ 6 c
Ewes	4¾@ 5¼c
Milk Lambs	7 @ 7½c

DRESSED MEATS.

Steers	10½@11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	11½@12½c
Ewes	11 @11½c
Suckling Lambs	14½@15 c
Dressed Hogs	13½@14 c

WOOL.

Prices stand nominally as before for the spring clip, which is well sold out. The first fall wool from the San Joaquin district is expected in about a month, and dealers are offering about 7 to 9c for it.

Spring clip:	
San Joaquin	12@14c
Humboldt and Northern	16@21c
Calaveras	14@18c
Fall clip:	
San Joaquin	7@ 9c

HIDES.

Conditions show no definite change, the market being very quiet, but firm as to values, with limited offerings.

Heavy Steers, over 56 lbs.	15 @15½c
Medium	15 @15½c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb.	15 @15½c
Light Cows, 30 to 50 lb.	14½@15 c
Kip	15½@16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	25½@26½c
Dry Kip, 10 to 15	24½@25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

No large shipments of outside stock have come in this week, and about the most important event was the auction Thursday of 35 head weighing from 1100 to 1800 lbs., formerly in the delivery service of a local hay firm. There is no very urgent demand locally, but there is considerable inquiry from the country for good, serviceable stock that can go to work right away.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

Special Deciduous Market Report.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Considerable activity was noticeable in all of the markets, especially in the East, prior to July 4, owing to the holiday demand.

Yellow peaches were bought freely, and, though the offerings were fairly liberal, prices ruled higher than at any time during the season. On account of the heavy shipment of plums which has been going forward, and furthermore, on account of several varieties not carrying as well as in former years, arriving in the East in an overripe and decayed condition, the plum market took a slump, and up to the present has not recovered to any noticeable extent.

What few cars of Bartlett pears have arrived in the East realized satisfactory prices, from $2.25 to $4, the higher market for a few special lots in New York. Now that the shipment of Bartletts is becoming heavier, all markets seem to have settled to normal prices, ranging from $2.25 to $2.75 delivered.

Elberta peaches are beginning to move from the San Joaquin valley and the hill points will be shipping freely of this variety within the next five or six days. Georgia shipments are now at their height and will probably come in competition with our Elbertas, which, from present observation, indicates that the market on this variety will be only fair, though there is a strong demand at moderate prices.

Local fruits are now appearing in all sections of the Middle West, and this fact, coupled with the oversupply of cantaloupes, which were sold at disastrously low prices all through the country, has had a serious effect upon the California deciduous market.

Thompson Seedless and Malaga grapes from the Coachella and Imperial valleys are moving in car lots at the rate of from two to three a day, the first arrivals averaging $2 per crate for Thompson Seedless. Mildew and sunburn have affected the Tokay crop in the San Joaquin valley to an extent not to exceed 25%. Without any further damage before harvest the crop should equal that of last year.

The markets for the past week ranged as follows:

Chicago—Royals, $1.18 to $1.38; Hales, 75c to $1.20; Triumphs, 80c to $1.15; St. John, $1.07 to $1.31; Abundance, 74c to 75c; Tragedies, 95c to $1.40; Climax, 70c to $1.15; Burbanks, 65c to $1.25; Santa Rosa, $1 to $1.10; Simoni, 71c to 76c; Botan, 68c to 95c; Apricot, $1.20 to $1.45; Wicksons, 75c to 89c; Red June, 67c to 95c; Red Astrachan, $1; Comet Hlf, $1.20 to $1.30; Purple Duane, 70c to 85c; Shiro, 80c to 90c; Thompson Seedless, $2; Hinori, $1.30; Maynard, 80c; Diamond, $1.10; Formosa, $1.30; Bartlett, $2.47 to $2.80.

New York—Royals, 70c to $1.50; Hales, 80c to $1.40; Triumphs, 67c to 80c; St. John, $1.10 to $1.30; Abundance, 60c; Tragedies, 83c to $1.95; Climax, 64c to $1.60; Burbanks, 70c to $1.25; Santa Rosa, 64c to $1.35; Simoni, $1.10; California Reds, $1.56; Wicksons, $1 to $1.40; Lawsons Hlf, $1.20 to $1.60; Wilders Hlf, $1.07 to $1.65; Congress Hlf, $1.07 to $1.65; Red June, 70c; Crawfords, $1.40; Sugar, $1.05; Comet, $1.14; Purple Duane, $1; Sultan, $1.10; Tilton, 80c; Formosa, $1.50 to $1.55; Bartletts Hlf, $1.45 to $1.80.

Shipments of deciduous fruits from Sacramento July 7 were 10¾ carloads of peaches, 26¾ carloads of plums, and 15 carloads of pears, making a total of 2232¼ cars for the season to date, as against 1650 cars at the same time last year.

"What made you quit the club, Henry?"

"Reason enough, I can tell you. I worked five years to be elected treasurer, and then they insisted on putting in a cash register."

"How was your speech received?" asked one Labor member of another.

"When I sat down they said it was the best thing I ever did," was the reply.

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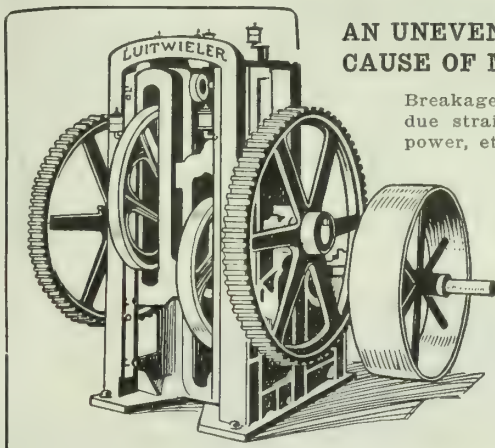

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PUBLISHER'S DEPARTMENT.

Another new book has just reached this office from the J. B. Lippincott company, Washington Square, Philadelphia, entitled "Productive Orcharding," written by Fred C. Sears, M.S. In this book the author has endeavored to sift the good from the bad in orchard work, and while the book does not especially pertain to California conditions, perhaps many of our readers will find it a valuable aid to them. The book is nicely illustrated and well printed, selling for $1.50.

The large number of new names added to our subscription list during the past few months and faithfully recorded in this department each week, should prove eminently satisfactory to our advertising patrons when they know that the names belong to real, live, discriminating farmers who consult our editorial pages for the latest ideas in farming and our advertising columns for the newest and best implements, etc., to farm with.

In this connection, be it said, we went a little below our average the past week; the number of new subscribers secured totaling but 179. As mentioned last week, quite a number of these came through the efforts of old subscribers, for which we thank them; but when we can get our full staff working again, we expect to maintain a steady gait of 300 a week or more.

Among those visiting Davis during the past few weeks in order to inspect the Giant Engine Scraper turned out by the Schmeiser Manufacturing Co., was Judge Marion De Vries, of Washington, D. C., who spent alomst a whole day with Mr. Schmeiser in examining the machine and seeing the manner in which it is worked. He was much pleased with his visit and thought the machine would be a big factor in the future welfare of the West.

Some three thousand of our subscribers have one, but we want every subscriber on our list to possess a copy of that latest work of Professor Wickson—"One Thousand Questions in California Agriculture Answered"—and to this end we are making a special offer to subscribers only. Write for it.

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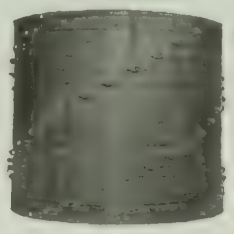

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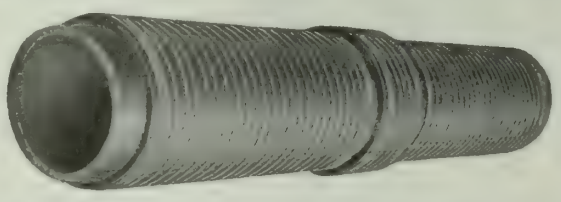

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DISEASES OF THE OLIVE.

[By Prof. W. T. HORNE, of University Experiment Station, at the Davis Fruit Growers Convention.]

In a general way the olive is one of our most sturdy and healthy trees. When planted within the regions adapted to its culture it is tolerant of minor variations in soil and weather and is comparatively free from serious diseases.

Root Diseases.—Fungus root rot or oak fungus disease is the same trouble which affects most of our orchard trees. The fungus spreads to healthy roots from infected wood lying in the soil. The bark is first killed in a very characteristic manner and the wood of the root decays gradually with a moist, yellowish white uniform rot which progresses until the root is completely destroyed. The fungus goes over from one root to another, so that after one tree dies, usually in a few years, those next to it die also, and a spot is formed in the orchard which continually enlarges. There is as yet no simple and single treatment for this trouble, but by careful study some means can probably be found to combat it in most situations. While the olive is more resistant than stone fruits and citrus fruits, nevertheless what is said about this disease in another paper at this meeting applies fully to the olive.

The olive appears to be free from injury by crown gall or nematodes. Olive knot appears on exposed roots, but seems unimportant as a root disease. Cultivation so near the tree as to cut and mark the roots is wrong and should be avoided, because such cuts give opportunity for wood decay and favor infection with olive knot.

Diseases of Trunks, Branches and Twigs.—Olive knot or tubercle disease is a disease primarily of trunks and branches, although exposed roots and leaves may be infected. It consists of localized abnormal enlargements or galls. These are usually about the size of walnuts on healthy twigs, but on weakened small twigs are much smaller, sometimes scarcely noticeable. On the thick bark of the trunk they may be several inches across. The knots are distinguished from the normal enlargements on olive trees by the fact that the normal structures remain healthy and green and give rise very often to new shoots. The olive knots, however, crack and the outer part dies while the inner part usually continues to grow for several years, finally forming a deeply cracked growth with the outer parts dead and pushed apart. When the knot is cut open it is found to be a mixture of bark and wood with watery cores or pockets in the center which later dry out.

Nevadillo Olive Tree With Knots or Tubercules on Swollen Trunk and Main Limbs.

The result of olive knot on the tree varies with the number of knots formed. A few knots apparently do little harm. Many knots choke and depress the vitality of the tree. I have not seen a tree killed by it, but some seen have doubtless been rendered unprofitable. It is important enough to merit serious consideration by the olive growers and it should be avoided or eliminated if possible.

One serious feature of olive knot is that it becomes worse with increase in the vigor of the tree. Gain in size and number of olives per tree will be accomplished largely by increasing the vigor of the trees. Therefore we may expect the disease to become more serious as the culture of the olive is improved.

The cause of olive knot is a specific kind of bacteria. These bacteria live in the fresh moist part of the knots and sometimes work out into little pockets in the wood immediately below the bark or in twigs and sometimes get into the pith. They are not distributed throughout the healthy parts of the tree, nor are they in the soil nor in manure. Practically they live only in the living knots or very near them.

Olive knot spreads through the bacteria being washed out of the knots by rain, by subsequent spattering, and by accidental methods of transfer from tree to tree while the trees are wet, and by being washed down into crevices in the bark or by being brought into contact with living inner bark through being washed into new wounds. We believe there is no spreading of the knot while the trees remain dry. After a day or two of rain, whitish drops can be seen in the cracks in the knots. If a little of this whitish liquid is pricked into healthy bark a knot begins to grow after a few weeks. If the whitish material is examined with the microscope it is found to contain great numbers of the bacteria which cause the disease. These bacteria can be grown rather easily in cultures and studied. One of the most interesting facts about them is that they are very easily killed by drying or exposure to sunlight. All the bacteria which might be on the surface of a tree after several days of rain would be killed by one day's exposure to bright sunshine. Some, however, might be protected from light and drying in crevices of the bark and would continue to live.

Remedies suggested up to the present consist in cutting off the knots on the trunks and larger limbs. The knots should be cut to the level of the sound wood, and perhaps ⅛ inch of bark removed about the knot. The cut should be made so that a smooth, flat surface remains for healing over the edges. Some knots will reappear at the edges of the cuts and these should be removed as early as possible. All cuts should be immediately washed with a disinfectant. Corrosive sublimate, 1 part to 1000 of water, by weight, is recommended. The first cutting should be made in early summer and the second in early fall and the process repeated each year. At the fall treatment the wounds should be coated with asphaltum, as suggested in another paper presented to this convention, to prevent wood decay. So far as possible, twigs with knots should be pruned out, but I do not now recommend excessive reduction of the bearing wood, as I hope within a few years to get results which will justify me in recommending a definite course of treatment.

Withholding water or in any way reducing the vigor of the trees cannot be recommended. No varieties are immune, though the

(Continued on Page 54)

Pacific Rural Press

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., July 14, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date*	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.10	62	52
Red Bluff	.00	.00	.00	100	58
Sacramento	.00	.00	.00	94	52
S. Francisco	.02	.02	.00	74	50
San Jose	.00	00	.00	92	44
Fresno	.00	.00	.00	98	58
Independ'ce	.00	.00	.00	94	54
SanL.Obispo	.00	.00	.01	82	48
Los Angeles	.00	.00	.00	80	56
San Diego	.00	.00	.00	72	62

The Week.

California is surely getting up steam for the supreme World's Fair activity of 1915. Good crops are coming on and there is a sharp call for more help to handle them—thus giving farmers a realizing sense of the pickle they will be in if the law requiring a shortened day should be carried at the next election. But this problem does not seem to seriously retard the activity of candidates and their promoters who are putting in about sixteen hours a day hustling for signatures to the nominating petitions, without which they cannot get perches on the primary election tickets. This endless tramping, automobiling and aeroplaning for signatures creates the impression that there are hardly enough to give each candidate all the names the law requires, hence the army of beaters which each huntsman employs. This is all in marked contrast to the old system by which the office-seeker strove for a few delegates to a convention—the delegates often assuming the burden of hunting the candidates who would look at things their ways. The result probably is that the masses of voters are awakened to the fact that there is something politically doing and are prompted to take active part therein—which may be counted an advantage. Incidentally, there is generated the activity first mentioned, and both at city corners and country cross-roads the "parleys" of the midsummer afternoons rival those in Mexico for duration and for words without action. Nevertheless the personal contact, the fencing against disfavor, the urgency of approval, the chance to sound the candidate on issues which seem to the electors important—all these are worth all they cost, and the fuller participation of the farmer in public affairs is certainly desirable. And then, such exercises this summer and autumn will nerve-up everyone to the alertness, frankness and outspoken interest in California's advancement which we expect to show to the whole world next year as one of the grandest exhibits at the exposition. It needs no argument to establish the fact that when the world comes to judge California, the decision will be based largely on what the world sees in Californians.

Here and Elsewhere.

Not only here, but in the larger field of the whole country, the politician's proposition seems to be the old one: "heads, I win; tails, you lose." Take the tariff, which of course we only mention incidentally and not for argument. We were told that to take off the tariff would not hurt business or prices. Something surely has hurt business and prices—except in food supplies of some kinds which the whole world is short of and has little to sell—but never mind that: we might drop into an argument and try to explain why people have less to buy with. But as to the tariff: another great beneficence of "the deep damnation of its taking off," was to be the reduction of the high cost of living, thus benefiting the consumer and plucking the "millionaire farmers of California." It is reported from Honolulu that Senator Judd of our nearest island possession, who has just returned to his home from "the mainland" (which means the good old continental United States), takes a perspective glimpse at us in this way: "In every instance where the tariff has been reduced the foreign trusts have put up the prices of foreign goods so that reduced duties have brought increased costs of living, at the expense of the home buyer and in favor of the foreign seller. A New York financial journal recently made a careful investigation of the cost prices of foodstuffs and published the statement that the only article of food that had gone down in price was onions, it now being possible for the housewife to purchase three for 5 cents, whereas she had previously paid a nickle for two."

But even this little seems to be a godsend to the free traders, for surely nothing more effectively advertises the fact of its going-down than an onion.

Farmers' Trusts.

We wish we could think of something as strong to say of the trust situation, for that, too, seems to need elucidation. It baffles us a little. President Wilson has apparently three teams hitched up to drive through Congress, unless, as another has suggested, he should himself get indicted for being in restraint of legislation—otherwise than by veto, which is his constitutional stunt. The great problem in statesmanship at Washington seems really to have some agricultural relations, for it is described by wire as a question whether you can drive three teams single through a canebreak in less time than you can get through by hitching the whole bunch of mules in one team. But there is another farming problem involved in it also. One team is the Clayton bill now before the United States Senate. The bill would specifically exempt labor and agricultural organizations from violation of the Sherman Anti-Trust Act, while it would still have the law hold for all other lines of activity.

Farmers do not seem to have declared themselves very strongly on this subject, for they cannot see very clearly why they should be thrown into the slough between labor and capital while they have a good bridge of their own with a strong abuttment on each side. They are primary, proprietary producers and have no organizations which aim to get anything more than fair pay for their productive effort or to restrain anyone except those who are endeavoring to make exorbitant secondary profits at their loss. There is really no analogy between organizations which arbitrarily fix wages and hours of service and farmers organizations which have to do with distribution of food products, but they are linked in the Clayton bill as above cited and they seem to have the same enemies. There is in Washington a private organization having a name which has a public semblance, viz.: the Chamber of Commerce of the United States. The membership consists of various kinds of "higher-ups" and is said to be "representing 585 associations whose membership exceeds 250,000 individuals and concerns." This organization recently took a vote of its membership on the question of whether in trust legislation there should be discrimination against bankers, lawyers, manufacturing and other organizations, in favor of labor and farm organizations, and the vote was 669 to 9 that there should be no favor to such organizations. This is another instance in which the farmer gets caught in the jamb of the door, as he usually does. As between the labor organizations and the employers' organizations there should be no difference, perhaps, because one is opposed to the other; each for its own reasons, which we do not need to discuss. But the farmer belongs neither to labor trusts nor employers' trusts, but must minister to all the people all the time and must live to do it and he must defend himself against imposition from all other interests. As to the issue which is now forced upon him in Washington by the two particular types of trusts which are in contention, the farmer can cry with Mercutio: "a plague o' both the houses."

The Farmers' Humility.

The various combinations, whether you call them trusts or what-not, which are trying to legislate for the farmers interests remind us of the old story of a small congregation which assembled in good fervor to pray for the humility of their pastor. "Keep him humble and poor," was the petition of an honest soul, to which another, of more economic cast, refrained: "We would not ask too much of Thee, oh Lord: you keep him humble; we will keep him poor." On another page of this issue may be found a letter from one of our RURAL family, who calls himself a socialist and from whose position we have taken occasion largely to dissent and yet we are glad to give him his word. He has a very clear conviction that the farmers are suffering from trusts enough to keep them very poor unless they pull themselves together to oppose them; and in that we certainly believe he is right. According to recent declaration by an excellent religious sect, the Dunkards, there is another way to keep a man humble, which seems to apply with particular force to California, if it is true, as we have seen it stated, that there are more automobiles with the farmer's 'horny hand of toil' on the steering wheel in California than in any other State in the Union. At their

general assembly in Rossville, Illinois, last week the Dunkards prohibited ownership of motor cars among their membership because a motor-car makes a man "high-minded, superior and puffed up." It was voted and duly ordered that no member possess a motor-car "until it is possible to procure more light upon them." And we remark, without any disrespect, that the light will surely come. It will come to the Dunkard just as it came to the old New England pastor whom the crafty deacon asked to ride with him just after he had preached a scathing sermon against horse-racing. The deacon and his pastor were soon flying along behind the deacon's trotter. Then there was a pounding of hoofs in the rear and, a moment later, an extended head with fiery eye and dilated nostril appeared at the pastor's elbow. Then it was he hissed in his companion's ear: "Can't ye go a leetle faster, deacon?" Oh, yes, the light will come to them who now sit in darkness.

Wild Life and Farming.

B this we do not refer to joy-riding or horse-racing, as might be suggested by the preceding paragraph. We have received interesting statements from the "California Associated Societies for the Conservation of Wild Life" which is neither an automobile agency nor a jockey club, but is organized for the purpose of protecting wild animals and birds from ruthless destruction. The occasion for the societies' present appeal to public notice is the desire to oppose a movement on the part of dealers and restaurant-keepers to make all game saleable in the markets which aims by an initiative amendment to the constitution of the State to remove the existing proscription of hunting for market sales. While some land-owners might like to sell a game crop, we take it land-owners generally prefer not to have their lands run over by market hunters. Farmers are naturally not anxious to have wild-life over guarded or conserved, for this wild-life is very often of direct injury to crops and because it is only a little better to have lands hunted over by sportsmen than by market hunters. Some game laws are a direct injury to farmers, as our correspondents frequently have occasion to point out. Therefore, we cannot arouse any great amount of enthusiasm in protecting wild-life unless there should be some adequate way for preserving it in enclosures large enough to provide natural conditions and environments, where these interesting birds and beasts can be seen and studied. We have no desire to people forests generally with wild-life because of the trespassing upon lands on which people are trying to make homes. We distinctly do not want game preserves and privileges such as they have in Europe. Nor do we want introduction of wild animals like the freeing of elk some time ago in Shasta county which last week were damaging orchards, gardens, and field crops in Scott valley, Siskiyou county. When it comes to an issue between wild life and the settlement of agricultural lands, wild life must go to suitable places for its conservation. It has been proposed that these elk be taken farther back into the government reserves, which is all right if it be also provided that they be kept there. Marauding bands of deer are intolerable. While we have no liking for the pot-hunter and do not care to give him or his city partners, the dealer and restaurateur, any particular promotion, it does not seem to us reasonable to force a farmer to live in distress in a region overstocked with wild life. Nor is it reasonable to prevent him from selling a surplus of wild life as he would a surplus of domestic stock. Conservation of wild life is like forest conservation of the rational sort, which provides for use of that which is fit for use, and in that use the man who pays taxes on land and grows crops upon it has a better right to share, and perhaps get a profit from, than those who have only sentimental or emotional interest therein. We do not wish to set free an army of pot-hunters, but we would like to see these game laws revised to properly protect and conserve the farmers' interest and industry.

Queries and Replies.

Querists must submit full names and addresses.

Damages by Bad Bees.

To the Editor: My berry fruit and grapes are badly damaged by the bees in my locality so that I suffer loss. Kindly inform me if there is any law in this state whereby relief can be had.—Fruit Grower, Tulare.

We know of no such law. You might recover damage by suit for trespass but you would have to prove, first, that the bees really punctured the fruit and were not following some other perforator; second, you would have to tag the bees and follow them to the hives of any particular bee keeper you desired to proceed against. As a rule bees are helpful to fruits and the harm they may do is negligible when compared with their services in pollination, though, of course, under certain conditions they are exasperating.

Leaf-Eating Beetles.

To the Editor: June beetles are eating the leaves on young orange trees and deciduous trees they have stripped the leaves. I used arsenate of lead to spray trees last summer. It did not help. Is there any spray that will kill them?—N. E. A., Anaheim.

Arsenical poisoning is the best treatment for leaf eaters. You either had poor arsenate or did not apply it well. If it is a properly made arsenate, you can use six pounds to 100 gallons of water without injury to foliage. If you have Fuller's Rose Beetle and not a flying chafer, you can shake them off, band the tree with fluffy cotton and they cannot get back again because they cannot fly.

Gumming of Young Cherry Trees.

To the Editor: A friend set out this spring near Stockton some one-year-old Royal Anne cherries. They have gummed badly. I believe it is borers at work, but am not positive. What is the best treatment for this time of the year? A few years ago he lost some older trees which I take it were affected much the same way.—R. E. L., San Jose.

Without seeing the trees in question, we can only submit the suggestion that the cherry trees in question are gumming and behaving badly from one of two causes: First, they may have been sunburned after planting, in which case they are liable to suffer from the intrusion of borers; second, they may have been injured in the root by too much water in the soil after planting and before the roots became established. Either of these causes results in loss of many trees very soon after planting. Probably the best treatment is to cover the bark wherever the sun can reach it with whitewash; also to cut back the trees unless they were cut back severely at planting time. The whitewash will prevent farther sunburn and borer injury and give the trees a chance to recover, unless they have been too badly hurt.

Submerged Fruit Trees.

To the Editor: In the case of a prune orchard on peach root which this past season was covered with seepage water some three months, I would say: the orchard is six years old and until now has been very thrifty, but there are now some 500 big, fine trees dead, and the remainder look very badly. Is there anything I can do for the remaining trees, and what killed the ones that died, and would they have died had they been on myrobalan root?—Grower, Colusa.

We have no doubt the trees were killed by water standing in the soil during the rainy season. The peach is quite subject to such injury, but the myrobalan root resists it—although we do not know exactly how much submergence it will endure. There is no treatment for trees suffering from standing water except cutting back the top to reduce the evaporation and thus enable the injured roots to re-establish themselves, if their injury has not gone too far. Prevention of injury can be secured by underdrainage of lands which are subject to standing water in their natural condition.

Working Out Bartlett Plum.

To the Editor: I have 50 three-year-old Bartlett plum trees. They bear well, but the fruit is too small and too tender to ship and can hardly be given away locally. It has a peculiar flavor, but rather flat. I intend to work them over to Climax, Wickson or Tragedy. Would you advise budding now, or wait till spring to graft, or pull them out? The Bartlett makes a great growth of young wood and suckers about the base of the main branches.—S. E., Fresno.

Who thinks the Bartlett plum worth growing? If they have to go, we would get in buds in properly situated new shoots this summer. In this way you can arrange for the right number of new branches for a new tree and save much time. Where buds do not take you can put in grafts next spring and thus get a full stand. We would not sacrifice stems and roots by pulling out.

Federal Reserve Banks.

To the Editor: Can you give me any information in regard to federal reserve banks? What are the conditions and how are farmers to proceed in order to avail themselves of the benefits of these banks?—Reader, Imperial.

Although, as stated in our issue of July 4, there has been arrangement made by which United States reserve funds may become available for loans on agricultural lands, there will be no direct loans from the reserve banks to land-owners. The money will be placed through local national banks. These banks acquire membership in the federal reserve banks according to the law and thus become the dispensers of available funds. There are several propositions pending in Congress for the organization of agricultural banks which shall have the placing of federal funds, but no such legislation has yet passed.

Orange Tree Pruning.

[By Prof. C. R. Paine, of Redlands, at the Fruit Growers Convention, University Farm.]

Motto: "Nature is controlled by obeying her."—Lord Bacon.

To make renewals of fruiting wood and removal of weak and rank growths with the object of putting the tree in a thrifty condition, so that its crops may be increasingly profitable, should be the aim of the orange tree pruner. In fact it is one of those kinds of work that, in times of financial hardship, may be postponed; or, in the view of some, may be neglected altogether, in orange growing when compared with that kind of work every one recognizes as absolutely essential to any success, at all, such as tilling and irrigating and fertilizing the soil of the orchard; that is to say, it often comes last, or, not at all. This is because the orange tree is so accomodating, for one season after another, in its early life, in producing, according to its unassisted and unhindered will, large crops of fruit with a fair ratio or merchantable quality.

In the multitude of acres now planted in California; in the removal, 150 miles further south in the peninsula of Florida of safer citrus plantings, and, in the greater skill now exhibited there in cultural and marketing processes; and, in the fact that there is, as is said, in Mexico, an area twelve times as great as in California, suitable for citrus culture, which may, ultimately, be utilized at less expense than in California;—in these conditions, it certainly behooves us here to study how to work to the best advantage in this field of producing.

If tree neglect can be turned in the direction of improving the productive powers of the tree, it is important to study this phase of the business.

The Orange is Different.—There is more study given to the care of the tree and more uniform good results, in consequence, in deciduous fruit culture and in lemon growing than in orange growing. The wild, natural way of the apricot and peach tree, for instance, where growth of branch and shoot was luxuriant, and the fruit pulp was less in bulk than the fruit pit, has now been reversed; the lemon tree no longer sends forth towering branches, as if it were a forest tree; nor is the fruit rank and coarse, as was the wood growth. It has been trained by the skill and art of the pruner to form growths in abundance, specially adapted to produce merchantable lemons.

Get Good Fruit Wood.—Renewal of the best fruiting wood should be a prime object with the orange grower. If this is neglected,—and the orange tree has a natural habit of growth, in sending up many rank shoots along each branch, that affords the excuse for neglecting this work, so well done with peach and apricot trees, and which results so profitably in such trees—the neglect, which does not seem neglect for a good many years, will result, as many of us know by experience, in weak, terminal growths all around the exterior of the tree, and, for a time in strong, upward growths, from and near the top parts of the tree, and in a dark, fruitless interior. The fruits may be numerous on such weak foundations, but they will be of a whitish yellow color, and of unmerchantable sizes, while that on the rank growth will partake of the character of the wood it grows upon.

The Way the Tree Does It.—Looking at most orange trees as they will appear in most orchards, in the spring of the year,—save in exceptional trees,—we see an outward surface of new and shining leaves and a multitude of fresh new shoots, issuing from the axil of every leaf and abounding in a wealth of bloom, a very beautiful and promising vision of profit to come; so it will appear, year after year; and we scarcely care to mutilate their beauty with tools of steel. A new annual growth comes forth from every branch which, fruiting, droops heavily and covers the growth of the year before, which then fruits more sparingly.

As years go on, the covered branch ceases to fruit at all, and, at last it dies, overcome by its successor. Still, growth continues from the new one which fruits well for several years, burying, like its predecessors, what was once the best part of the tree.

In course of time, the orange grower observes the hidden, useless branches, that once were the glory of the tree, overlapped by newer growths, year by year. Then, there is an intermingling of the weak and the strong, and the outside of the tree ceases to be wholly green and thrifty. Generation after generation, subdivisions of the original main branches will appear, overlapping and overhanging the dead and the dying; but among them, thrifty shoots are rare and the terminal foliage is thin, small and yellow; fruiting growths of short stems and green foliage appear within, along the limbs, nearer the trunk, in contrast with the original location of good leaves and fruit on and just within the outer surface of the tree. The more open nature of the tree at this stage permits access of light, and the food supply here in store, gives rise to buds that make fruit stems.

So the tree goes on, growing and fruiting, but presenting, on the whole, an unthrifty look, in great contrast to its original head of green.

This new phase of scanty foliage without and greenness within is, perhaps puzzling to the grower, and he resolves on high fertilization, which will defer the time, when he must prune the tree; for in its then open condition, growths, in great number will fill the interior, and a stifling process of self-destruction will again follow and be the end of thrift in the tree top.

How This Can be Prevented.—These stages of unthrift could have been avoided by systematic annual pruning, limb by limb.

The original branch can long be maintained in vigor, by preventing its robbery by upstart shoots, other than short-stemmed growth; if growths, appearing on the main branch, persist in rankness, they must be cut off by the shears, before they have reached such dimensions that only the saw can separate them from the limb from which they are sapping the vitality.

Preventative annual pruning of all main branches, will surely prolong the life and health of the navel orange tree, better than pruning at longer intervals when the regular formation of the system of growth has been seriously broken up, and vitality has receded toward the main central stems, (for the trunk rarely is a single stem).

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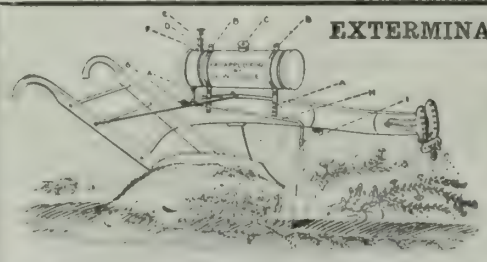

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When the head of the tree is too poverty stricken to be relied on for profit, and the whole becomes decadent, there are still ways of recovery.

Nature, in one of her freaks of temperature which surprised the Southland in January, 1913, in many trees, took all the leaves away; then, she at once reasserted her powers and clothed the naked trunks, and the parts of the limbs nearest to the trunks with fresh, green leaves. Here was a demonstration that the highest recuperative powers of growth, have their location where parts are larger and undivided. Some time elapsed for leaf renewals, on good branches and even on terminal twigs.

Good storage in starch granules supplied the nutriment for adventitious buds, which, under the stimulus of light, sent forth rich leafage, in a new region.

Where openness sufficed, the new interior shoots fruited; later, when the branches renewed their leaves, thus shutting off the light, within the first growth on the trunk ceased to blossom, and, as before, the fruiting region was on, and within the outer area of the tree top.

What Nature Suggests.—This process of leaf development on and near the tree trunk and the retardation of development on the branches is a lesson the pruner should take to heart; then he will not be slow to do what he should have done in the first stage of the decadence, viz., to cut back the brushy ends of limbs from which little hope of satisfactory renewal of good life and color may be expected. Timidity in cutting exhausted ends of limbs to the points where good growth exists, or is promising, and procrastination in so doing, undermines the health of the tree, for, if the foliage is sickly, such will be the state of the unseen root system, for its vitality corresponds to that of the tree top.

Relations of Root and Leaf.—That this may be clearly in the mind of the hearer or reader of this, the following brief statement of root and leaf action is here presented.

The root hairs absorb water, holding in solution mineral soil elements needed for growth; the leaves, by respiration of oxygen, which is as necessary for plant life, as breathing the air for its oxygen is to animal life, acquire energy for their functions by this process; they then take in another constant constituent of the air, carbon dioxide, and combine the carbon and one of its oxygen elements with the water in the leaf, holding in solution mineral elements from the soil, thus elaborating true or complete plant food to be distributed throughout the system between the bark and the wood. The conditions for leaf action are the presence of grains of green coloring matter in the cellular tissue of the leaf, technically, chlorophyll, and the light of the sun.

In the dense shade of the tree and in the darkness of night, the conversion of plant food material into plant food fitted to build the structure of the tree, does not take place.

If the foliage is yellow and there are chlorophyll grains only in the veins of the leaves, it is inefficient to digest raw material into nourishing food. Thus it is plain, as before stated, that tree life is at a low stage; plain, too, that the root system is starved, because the constructive process of food-making has not been active enough, for the reason that the leaves are not normally green, and this one factor, visible to the eye, is plainly the one the grower needs to make potent, as again it is in young trees, without his aid. He cannot restore the vitality of the little colorless leaves. He must remove those parts of the branches that carry such leaves and lay open to the light the parts of the limbs that still abound in vital force. Pruning is one method, one part of the plan to be pursued; the other is a new supply of plant food readily available to the root system.

Renewing the Whole Top.—When recovery of vitality is not satisfying, following the cutting of ends of limbs, on which the leaves are small and yellowish, and further extensions of growth may not be expected, when, in fact growth is at a standstill, there are two ways of recovery, one, long practiced in all trees in such condition, that is, to lop off all the limbs, leaving only stubs to project from the trunk.

For the reason named before, when Jack Frost defoliated the branches and new growth followed on the larger parts of the limbs, thus exposed to light, so on the stubs of the tree braches, too weak elsewhere to make new growth, rich foliage will appear, reinvigorate the naked tree with their food-making powers.

There follows a wait until the third year for the return of good fruiting conditions.

Opening the Top.—There is still a better way to bring about renewed vitality in decadent trees with less loss of time to recover their ability to bear good fruit. Like the way of stubbing the branches, the method postpones the day of uselessness of trees in a decline of vital powers.

Some years ago the writer discovered a number of his trees that had resisted all ordinary efforts of restoration, and he conceived the plan of cutting out from the top of such trees several larger branches at their junction with the trunk or other branches. This left an open space in the tree top which may be likened to an inverted cone or a deep basin.

The observant orange grower will note that in old trees the topmost limbs lose vital force sooner than limbs issuing from the trunk nearer the ground; thus, the loss to the tree of such limbs is of less moment than elsewhere.

The same results in growth renewal took place on the exposed parts of the trunk and limbs, as in the instances of frost defoliation and cutting back the limbs to bare stubs, and for the same reasons, viz. exposure to light and air, and food supply ready for the use of new buds that will spring forth from any part of the bark as exposed.

Further, new growth issues not alone from the new bark, but also from the under sides of the twigs and branches of the limbs below, which become fruit bearers,

Should the pruner be timid in his cutting out large limbs, cutting too few and allowing some to overhang, thus narrowing the top opening, some long shoots will develop, and the opening will close, by degrees, and the broad leaved, fruiting kind of growth, will no longer fruit, being deprived of the stimulus of light and of free air supply. This cutting out too few of the top branches will defeat the object intended. As the tree is renewed within, and the largest may be thus prepared for renewal in this way by the labor of less than ten minutes,—shortening the ends of the old branches may follow, (and it ought to follow because there is food supply in larger parts) at the convenience of the operator.

Where the heads of navel orange trees have reached a diameter of from 15 to 20 feet, the space between the tree rows is too much diminished for safe driving of broad orange wagons and for making a sufficient number of irrigating furrows. As a consequence, the tree row space is too wide to be well irrigated. The lack of water in that space no doubt contributes to the decadence of the trees.

The preparation of the interior of the tree for growth and fruiting affords opportunity for correcting these two conditions by cutting back the projecting limbs that have lost their power to produce leaves and fruit.

By thus transferring the fruiting area, to a considerable extent, to the interior, we control Nature, as Lord Bacon has said, but it is in obedience to her law.

We might hollow out the head of the tree, as some have done, with no results of value; her law in the method described is: "Let there be light"; then there follows a re-creation of growth.

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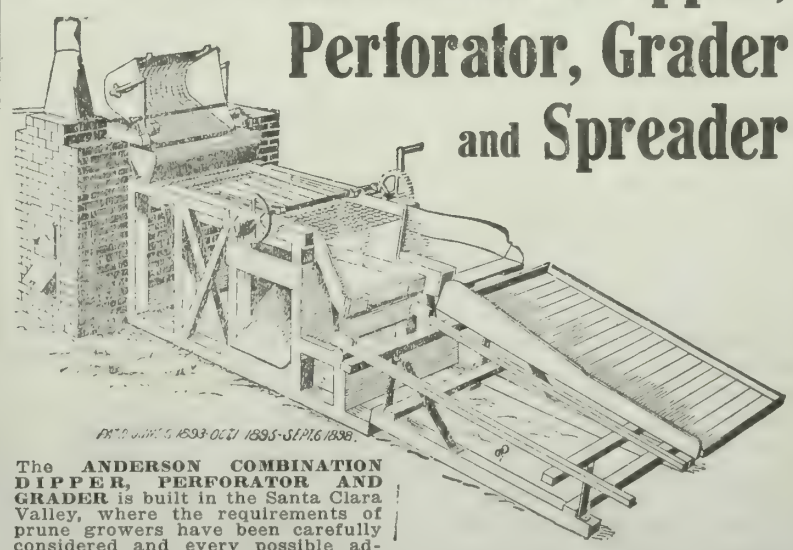

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Plum Packing for the East.

[Written for the PACIFIC RURAL PRESS.]

Practically all of the shipping plums of California are crated in ranch packing houses, more or less well equipped. They should be handled like eggs, for bruises do not show quickly on colored plums, but often hurt their sale by the time they reach retail markets. Laying them into the picking basket (not dropping them a foot), and packing directly from the basket into the crates, avoids bruising and what is of much importance, it leaves the "bloom" on the fruit.

The bloom is a powdery insubstantial stuff which is lost by handling. That leaves the plum shiny and much less attractive.

Two or three crates should be packed at once, with different sizes, always taking the top plums from the picking basket and laying them directly into the crate "tins" (square, sloping sided thin wooden baskets with the upper edge rimmed with tin.) Good packers tell the size before they pick up the fruit, look at the other side of each one and lay it in the right crate 4 square, 4x5, 5 square, 5x6, or 6 square according to variety and how badly the fruit on the tree needed the thinning it didn't get. The smaller sizes require much more work picking, packing and inspection; they sell less readily and at lower prices per crate, though there are many more fruits, yet many growers do not feel strongly enough the need of thinning fruit before it matures.

Some growers allow their plums to be dumped from the picking baskets into lug boxes, and thence dumped onto sorting tables where the bloom is "pawed" and rolled off in the effort to pack one size at a time. The various dumpings of course bruise them more or less.

No plum for the East may be wormy or the skin broken. They should be packed tight to allow for shrinkage, but should not be squeezed. A better price will be paid for a tight 5x5 pack than for a loose 4x5. They are packed three tiers deep and are much better with the same number of plums in each tier. This requires larger plums for the top anyway on account of the flaring sides. Packing 4x5 plums on top of 5x6 is fraud. It is better for the shipper to put the small fruit on top.

On the Earl Fruit Company's orchard at Vacaville, managed by Chas. Collins, are about 30 acres of plums. Mr. Collins places the cost of picking and hauling at 7 or 8 cents per crate, the packing is 6 cents per crate average through the season. He also insists on a tight pack and expects a kick if the smaller plums are placed in the lower tiers. As the fruit ripens it settles, anyway, and becomes more or less jammed by the jarring of its own weight. It should be packed at least one-half inch above the edges of the baskets, because it will settle that much and when put on sale at Eastern fruit stands, should look like a full basket. In nailing the top on the crate, cleats are laid under it to keep pressure from the fruit.

When the size is such that an even number of plums won't reach across the basket, the first row is packed tight and the first plum of the second row is "nested" into the hollow at the end of the first row and the rest of the second is packed tight against it, etc. This makes the whole layer tight. This is called a "broken pack."

Plums that are longer than they are wide are packed slanting, and some, the Tragedies, Clymans, Diamonds and Grand Dukes, for example, may be packed stem down. The second layer in such cases is "nested" between, but on their sides, or the stem end down. There would be too much tendency to settle if the points were nested down. Wicksons are usually laid on their sides, because their pointed ends must be protected from bruising, though they are sometimes packed stem down. The points are not always of the same length, however, and if packed point up, each layer presents an irregular surface which would be avoided by laying them on their sides.

The inspector of plums on the Earl ranch nails the tops on the crates so that he is able to certify every crate inspected.

Plums are displacing apricots and peaches as the favorite fruits of Vaca valley, according to County Horticultural Commissioner Clarence McBride, because that section is peculiarly adapted to fresh early shipping fruit. It has less competition in that than it has on the later fruits, and on Eastern markets the plums are more staple and pay better than others. California has nearly a monopoly on the popular Japanese varieties of plums, anyway, and as C. M. Hartley, president of the Vacaville Fruit Co., says, "It is better for each section to stick to those varieties it can best grow with the least competition."

DISEASES OF THE OLIVE.

(*Continued From Page 49.*)

Mission is doubtless much less injured than the Manzanillo. The most desirable varieties should be planted regardless of knot resistance. Probably many olives can be profitably grafted over to pickling varieties, but where the trees are infected with knot I should recommend that the knots be carefully eradicated from the tree one or two years before grafting over. Several varieties of oil olives are very susceptible to knot, as well as being undesirable in other ways even for stocks. I have not observed the comparative resistance of the Ascolano.

OTHER DISEASES.—Wood decay is an important factor with olive trees, although its results will not be seen so quickly as with trees like peaches. We have repeatedly found olive trees infected with wood decay fungi from pruning wounds and sunburn. Careful consideration of my paper on wood decay presented to this convention is recommended.

Exanthema is a disease of olives not previously reported. Several years ago a case was called to my attention and examined in a preliminary way in which the symptoms corresponded very closely with those of exanthema of citrus trees. It was called exanthema in my notes. The disease consists in the dying back of growing tips and the pushing out of numerous shoots from the nodes below. There is a more pronounced puffing of the bark than in citrus trees, with areas of dead tissue in the puffed regions and an unusual prominence of the lenticels. During the past year the disease has been much more carefully studied by Professor Smith and Mr. Boncquet, and I believe the general correctness of my idea of the disease has been supported rather than disproven.

The trouble appears to be associated with defective drainage and perhaps alkali, but these may not be the cause. It seems to be as serious for the olive as exanthema is for citrus fruits, but thus far has not appeared widely distributed.

LEAF DISEASES.—Leaf-spot is the name given to the disease caused by the fungus Cycloconium oleaginum. Rather large sooty spots appear on the leaves, but apparently cause only slight injury.

Some leaf-spot diseases of other countries have not come to my attention from California. I am not aware that any of these are particularly dangerous.

FRUIT DISEASES.—Dry rot is of rather common occurrence, especially on some varieties. Sevillano is said by some to be especially susceptible. I do not know the cause of this trouble nor any remedy to suggest.

"I am unalterably opposed to the universal eight-hour law to be submitted by iniative petition."

Francis V.

KEESLING

Republican Candidate for

GOVERNOR

On the subject of the universal eight-hour law, a vital issue before the agricultural, viticultural and orchard interests of California, Francis V. Keesling says:

"Wherever a law limiting the hours of labor to eight can be enforced to the betterment rather than the injury of the men, women and industries affected, then it should apply. I am unalterably opposed to the universal eight-hour law to be submitted by initiative petition.

"It will not only work tremendous injury to the people it is designed to serve—the laboring men and women—but it will virtually destroy the great agricultural, viticultural and orchard interests of California, now burdened to the breaking point with excessive taxation and the penalties of ill-considered laws enacted at the behest of demagogues."

WHAT A SOCIALIST SUBSCRIBER THINKS.

To the Editor: I would like to say a few words about your proposed 8-hour law which is causing quite a lot of speculation among your subscribers. I am a subscriber myself of recent date, and like your paper very much, and what I will say is in good nature. I have no ill will to anyone and I claim the right to think for myself and give everyone else the same right.

I am a Socialist, so I must have wheels in my head, but will keep right on being a Socialist until you, or some one else, teaches me a better way.

I claim that under our present system it does not make any difference whether the farmer works his men 8 or 18 hours a day, or gets their labor for nothing or pays them $2.50 per day. If we got our help gratis we would get that much less for our product and have to pay just that much more for what we had to buy, and at the end of the year we would be just where we are now.

You state you have been working 35 years for co-operation. I respect you very much for that. I am a believer in co-operation and am a charter member of the Producers' Co-operative Association at Fernley in this State. We started with a small capital and have been discriminated against by some of the big trusts right off the reel. One large meat company will not sell us a thing, claiming we are a bunch of farmers trying to get the benefit of wholesale prices! Is it not fine to turn down the people that feed the world?

My friend, you will find we will have to fight politically as well as economically to get justice for the producers and consumers. According to my understanding, the co-operators have had to fight politically in every country where they have tried to co-operate. The Iowa grain raisers found that out, and they found the same true in England, Sweden, Denmark, and in fact all countries. I figure like this: If a man stole my horse, I should hardly expect him to hunt it for me. As the old parties have sold our birthright to the moneyed aristocracy, so I will look to some other party to retrieve my own, but not to the criminals who have made away with it.

The railroads are fighting for an increased freight rate and will probably get it, notwithstanding that they are making over 11% on their capital—water and all. The Harvester Trust was and is probably now making

1400%, and all the other big trusts are making enormous profits and will do so just as long as we have the profit system. But the farmer—where is he? His is the class that has about twenty times more capital invested than the manufacturer, but gets about twenty times less for the raw article than the manufacturer gets for the finished article. No: the farmer has no fight with the laborer, and the sooner he finds it out the better for both parties.

The farmer must organize as well or better than the big interests before he will get his own, and we must not leave the hired help on the outside, but try to make conditions so we will all be served alike: we must have justice for one and all.

In conclusion, I will say that the California farmers need have no fear of the so-called 8-hour law, for in my opinion it is only a vote-catcher for the politicians to get into office, and then give the poor Rubes the hee-haw! The Socialists would probably put it through if they had the power, but I don't believe they have. Any way, it might come handy for the farmers, after they lose their farms, as lots of them are doing, to have an 8-hour day to work under. So "cheer up: the worst is still to come."

Derby, Nevada. H. E. ORDWAY.

[You are surely a jolly soul in the face of disaster: but perhaps that is consistent, for is there not in your creed an old, false and abandoned religious doctrine, viz: to do evil that good may come? We will not, however, excite you to reply, for theoretical socialism has its own publications and platforms. We have no space for it in these columns.

We count as economic nonsense your claim that the wage the farmer has to pay is immaterial. Crop production is coming each year more clearly under economic laws, and it is along this route that lies the crop-producer's hope.

Co-operation is the only way known to us by which progress can be made toward that end. Co-operation does not tend toward socialism: it tends toward the attainment of full individual rights according to correct standards of individual merit and achievements. Co-operation in the countries you cite is at enmity with socialism and is scouted by socialists because it tends to the development of increased individual ownership and prosperity.

You are right that political power must be possessed by crop-producers, and it must come through organization. We have plenty of political parties and they all profess fairly: it is the farmers' organization which is needed to insist that such professions come through. They have been fed upon wind-swept platforms long enough: they now need good things from the legislative manger.

Your local experience with a meat company is exactly what has happened in all co-operative efforts both at home and abroad. European wholesalers tried to protect middlemen at first, but trade with co-operative concerns became so desirable that manufacturers, importers, etc., now seek orders from them. The same thing will happen with you as soon as your co-operative group becomes large enough. It has already happened in this State and elsewhere in this country.

We do not know whether your figures about profits of big business are true now or not. It is clear enough now that big business will be regulated and made to behave itself, economically. It is not necessary to politically dynamite the country to do that. It simply needs efficient co-operative effort—politically expressed, when necessary.

As to the farmer's relations to his hired help: farmers have always been more considerate and generous than any other large body of employers, but when organizations of people who do not know anything about farming conditions, attempt to enact laws which are destructive of farming business, farmers must be expected to organize in defense of their industry as they are now so effectively doing. This is the real issue now, and fine-spun theories about socialism and other "isms" have really no place in it.—EDITOR.]

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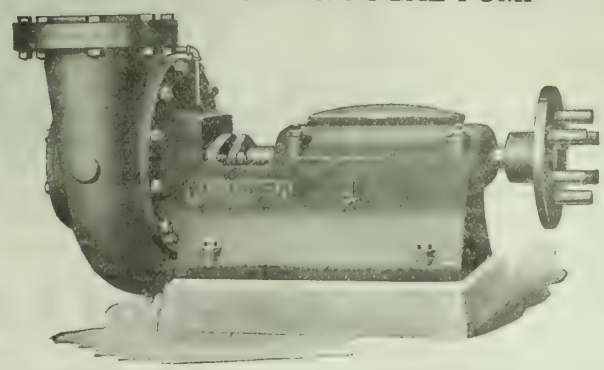

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MAKING SANITARY WELLS.

[Written for the PACIFIC RURAL PRESS]

The term sanitary, as applied to wells, means a clean well, containing pure healthy water, a well which excludes all poluted surface seepage water carrying malaria and typhoid germs. It also alludes to all tubular wells, as they are so constructed that no impure water can enter them. They are therefore desirable in congested districts, where the sub stratas are impregnated with foul surface seepage water, and in manufacturing establishments, requiring water which is free from alkali and other impurities.

In the rural districts of foreign countries, as well as in the United States, they are very popular as domestic house and farm wells, as it is now well known that small gravel veins near the surface frequently carry impure surface seepage water from barns and back yards directly into the well, through small openings in the casing.

When sanitary wells were first introduced, some people were under the impression that these wells were being made too small in diameter to furnish the required quantity of water, but the fallacy of this idea has been well established, by the thousands of these wells which have for many years been furnishing large farms and manufacturing establishments with an abundant supply of pure water.

Most large wells depend upon surface seepage water for their supply, and as it is customary to perforate the casings in these wells, the sand runs in through the perforations and fills up the well. Some of these wells are made large, to form a reservoir, but the fact is a reservoir holding a barrel or two of water amounts to but little, where several barrels of water are required in a short time. Sanitary tubular wells are no deeper than the average six or eight inch well, and the pumps are about the same size.

Large sheet iron wells are more expensive to make than smaller sanitary tubular wells, and in this case the cheap well is best. A great many sheet iron cased wells are drilled down into a strata of good water, that would flow over the surface if the well was properly cased like a tubular well, so that the lower strata could not flow off through the openings in the casing, into the water stratas above. And then the surface washings seeps in through the casing and spoils the well.

Irrigation wells need not necessarily be sanitary wells, except where alkali is encountered which may be shut off by the use of screwed casing, which should be galvanized to protect the pipe.

Sanitary tubular domestic house or farm wells are really very simple and easy to make. About all of them for house barn and garden purposes being two inches in diameter. A few being made two and a half or three inches, and people to have large gardens to irrigate sometimes make these wells four inches in diameter. But a three inch pump is about as large as can be operated by hand in any well. However, each succeeding strata of water struck in a well rises higher than the one above it, therefore the deeper the well the nearer the water will rise to the surface and the easier the pump will work.

Most all sanitary wells are cased with two inch, heavy standard, galvanized pipe, reamed out smooth inside, tightly screwed together and driven down in to the drill hole, positively excluding everything except the last strata of water struck. The pump consists of a heavy brass or steel cylinder, screwed onto the lower end of the casing.

When the well is completed, the pump standard, or head, is placed in position and the cap removed, the check valve is screwed on to the lower end of the plunger valve, and the plunger is crewed on to the pump rod and lowered into the well, until the check seats in the cylinder, then turn the rods to the left to disconnect plunger from the check, raise the rods about two inches and connect pump rods to pump standard and the job is done.

When necessary, a strainer can be seated under the check valve. Nearly all sanitary well pumps have cylinders for adjustable strokes up to 24 inches. To remove the valves, disconnect rods from pump head, lower the plunger onto check valve, and give the rods two or three turns to the right to get the check and pull up the rods and valves. No pipe to pull up, and no help or derrick is needed.

Constructive Agriculture—No. 28.

AUCTION POINTERS ON PACKING.

[Written for the PACIFIC RURAL PRESS]

"I can't suggest improvement in the California way of packing frut. It is the best packed and best graded of any that comes on this market," said a long-time leading wholesaler in New York city recently. Thus it behooved the RURAL PRESS writer who was looking for constructive criticism to point to a flat-breasted box of California cherries displayed beside one that was packed solid and rounded up in the center with fruit a trifle above the edges; and to ask which box would sell at the better price.

That box in which a quarter-inch of the inside surface of the sides was exposed above the fruit of course looked like a shy pack, but it wasn't. Only one nail had been used in the center of the bottom in making the box. The rough handling had loosened the nail, allowing the bottom to bulge. The fruit had sunk so that any buyer whether wholesale or retail, would get the impression that there was less fruit in that box than the other. Every buyer must get the most possible for his money, so he pays most for the box which looks like a full pack.

A man on the Chicago auction explained that Eastern buyers of California fruit are like the rest of humanity—they like to get something for nothing if they can—and it looks like they are getting it when the packed box or crate of fruit bulges up in the center. Other things being equal, the higher price is bidden for the bulging packages. The flatness is sometimes due to loose packing, in which case the upper fruit settles down between that in lower layers. A few more plums or cherries would have made a tight, full pack for which the buyers at auction would stand up and lean over their desks to yell their bids at the auctioneer, waving their arms and acting like crazy folks in pandemonium as they do when attractive lines of fruit are being auctioned.

Flatness of the pack may also be due to softness of the fruit, in which case it simply settles and flattens out, filling in the corners between. There is as much fruit in such a box, but bidders on auction will not offer so high a price. But a bulging pack sometimes causes trouble by bruising the fruit next to the cover. To prevent the fruit from being mashed by the weight of packages resting on it, cleats are nailed across the ends of cherry boxes. With high packs of apricots and plums, the cleat is across the ends under the cover. Sometimes two cleats are required to raise the cover high enough. They are so narrow that rough handling tips them partly over, letting the cover rest on fruit and spoiling it. If they were so wide that when doubled they would still be wider than high, this trouble would be avoided.

On cherry boxes, the cleat on top of the cover protects the bulge, only so long as all boxes are squarely one above another. The jolts railroads give the cars often shift the boxes off the cleats. They are also often stacked carelessly on the trucks in unloading; in either case fruit is bruised if the boxes do not rest on the cleats.

Some people economize by using weak packages made from thin, rotted or knotty shook, only to lose the packages and a good bit of the price of the fruit, where with good shook a profit would be made. Northwestern cherries are quite commonly sent in crates containing 24 pint boxes, filled but not faced. The general sentiment of buyers seems to be a little in favor of these, since no handling of the fruit itself is necessary in retailing them. It is a question whether the careful facing of California cherries in 10-pound boxes pays for the additional expense. Attention was recently called at Vacaville to the need of a cheaper way to handle cherries, and here it is.

The carton cherries seem in general to bring about the same per box as those packed solid, though there are about two pounds less of fruit per box. They are attractive on display and have the advantage of being sold in the original package.

HONEST PACKS.—California fruit generally has so good a reputation for honesty of pack that the Chicago auction guarantees it as marked, and its manager claims that they stand the occasional losses due to dishonest packs which are not discovered until after the sale. On one day of the writer's visit to that auction, 50 crates of apricots marked "5x5" were sold and went to a retailer. A consumer bought one crate and found them 5x6. He returned them to the retailer, who on examination found 17 crates of this lot market "5x5" which were 5x6. On the same day three crates of "Bings" proved to be Royal Annes. A little before, a box faced with black Tartarians proved to be mostly Royal Annes. Little plums and imperfect plums are found in the bottom of baskets faced beautifully. But, as one man said, "The buyers look for the grower's label and depend on it. When a grower slips it over on them once, they don't forget it"; and since it is impracticable to examine much more than the surface layer of the one box in each lot opened for inspection, a bad reputation simply means that the discriminating buyer who is ready to pay the good prices, just walks past the fruit sent by that grower. So an honest pack under the same label as a previously dishonest pack does not have a decent chance to attract the price it is worth.

LOCAL WORK FOR STANDARDIZATION.

A determined and concerted effort will be made by the leading shippers and distributers of deciduous fruits and the progressive orchardists of this state to secure from the Legislature which convenes January 1, 1915, laws standardizing all fruit shipped from California to the East. These laws will include not only regulations concerning the pack, the marketing, etc., but in the case of grapes, the fixing of a minimum amount of sugar content, probably 17 per cent.

The matter has been agitated for years with little result, but the tremendous growth of the fruit industry, and the problems which lack of a standardized pack have laid upon handlers of fruit, have so added to the

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complications of the fruit business that growers and shippers alike will this year demand regulations which will protect the honest grower from his unscrupulous competitor.

Charles E. Virden, general manager of the California Fruit Ditsributers, heads the movement which is heartily indorsed by all large fruit shippers in this city. Virden has been active this spring in assisting the California Green Fruit Association, an organization of grape-growers in the Fresno district whose object is to prevent the shipping of immature, non-sugared, sour grapes.

The organization is a powerful one, including not only the grape-growers of Fresno county, but a number of the most prominent business men of the city. Powerful as it is, it is feared the Association will be unable to prevent the shipment of immature grapes to the Eastern markets. This inability, it is held, makes necessary governmental interference. One former attempt to control the Fresno situation failed.

The organization of the grape-growers, and the increasing interest among orchardists over standardization, has encouraged Virden to attempt legislative action at the coming session. With a powerful association at his back, and the assemblymen from fruit districts hearing from "home," it is believed some measures can be put through.

Standardization, according to its supporters, will mean the standardization of pack, and of markings. It will mean that fruit taken from the bottom of the box will be no different from that of the top layer. It will mean better fruit, smaller shipments, and larger returns.

FORTIFYING AGAINST CUTWORMS.

[Written for the PACIFIC RURAL PRESS by C. L. COWELL.]

To the Editor: Vineyardists of Sutter county have suffered greatly this year from the ravages of a sort of cutworm. These pests are striped in appearance, with two horns protruding from the head, and they are particularly numerous in seasons of heavy rainfall. So abundant were they during the past spring that whole vineyards were literally stripped. As many as twenty were found attacking a single vine. They seem to be immune to the ordinary poisons; in fact some were brought into direct contact with an arsenical preparation for a considerable period of time without any apparent effect.

The only sure method of extermination is to go through the vineyard and pick the worms from the vines, but the futility of this method is apparent when it is discovered that the exterminated army is quickly replaced by active and healthy volunteers from neighboring fields.

To protect his vines from these invaders, Mr. Oscar Eager of Live Oak digs a small trench entirely around the vineyard. He uses a plow for this purpose, going through the same furrow twice, once in each direction, thus making a clean-cut trench with perpendicular sides. The loose earth is used to form levees on both sides of the trench, and considerable care should be given this part of the work, as it is the levees of soft, loose earth that prove the cutworms' undoing.

The worms, in making their way toward the vines (or from them, for that matter) drop into the trenches and are unable to surmount the levees of loose earth.

Mr. Eager says he has seen his trenches literally squirming with these worms.

The point to be remembered is to use soft, loose earth in forming the levees, and to have the side that faces the trench as nearly perpendicular as possible.

[The worms which our correspondent describes are apparently not "cutworms," but some other defoliator. However, the method he describes has long been known to be effective against army worms and other migratory caterpillars.—EDITOR.]

POISONING HOPPERS IN YOUNG ORCHARD.

Young grasshoppers are still abundant in the foothills, and readers are calling for treatments.

J. W. Mills, of Marysville, gives the Cultivator an account of killing grasshoppers in newly planted orchard which may be helpful to some of our readers:

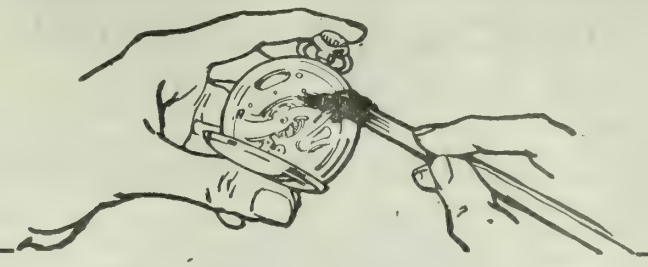
We tried poisoned bran well flavored with oil of rhodium, but in a few hours it was hard, and at no time did many hoppers eat it. They prefer anything green if it is within sight and they can see quite a distance.

The most effective method that we hit on for feeding them poison was fresh alfalfa dipped in a solution of arsenic. We prepared the arsenic in the usual way except that we made it very strong, one pound of white arsenic boiled in five gallons of water with one pound of sal soda, till the arsenic was dissolved. We put this in a barrel on a wagon and added 20 gallons more water. We then cut some succulent alfalfa and went directly at distributing it. We found that midday was the best time, as the hoppers were most active at that time and fresh cut alfalfa attracted them more than that which was wilted; at least they ate it more readily. In one orchard on adobe soil, the hoppers were so numerous on one-year-old peach trees that the branches were bending down with them.

One man drove the team and dipped bunches of alfalfa in the arsenic solution while two men distributed. A circle of thinly scattered alfalfa was placed around each tree and the trees shaken to frighten off the hoppers. It required about two hours for three men to bait ten acres.

The next day there were few hoppers to be seen, dead or alive, except a few dead ones under the trees. Under the clods near the trees and all through the spaces, thousands of dead or stupefied hoppers could be found. Some could hop but would not land on their feet. Under one clod we counted over 60 dead hoppers. As hoppers are cannibals of the worst type, the dead made good bait for those that followed, for it was a common sight to see them devouring dead ones. Whether they secured enough poison to kill them is a question, but we are inclined to think they did. However, we had to repeat the dose three times to clean out the newcomers. Each time we strung a line of poison around the outside of the orchard.

After a man has distributed this bait about twice, his finger nails will get so sore that he can hardly button up his coat, but it wears off in a day or two with no bad results.



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Pacific Rural Press

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AGRICULTURAL REVIEW.

Transportation Improvements.

Fair adjustment of freight rates is no child's play, but co-operative organizations can get many concessions. It was about a month ago that Manager C. W. Gould of the Growers' Co-operative Agency, of San Francisco and the Sacramento river, sold some windfall apples at $10 a ton to jelly makers in the city. They were shipped in 100-pound sacks, and the railroad charged 22 cents per hundredweight or $4.40 per ton, whereas for good eating apples packed in boxes and valued at five times the price of the wind-falls, they charged only $4 a ton gross weight. The excessive rate on wind-falls had been in force for years, and the producers were not selling many of them.

The transportation companies would not remedy the inequality for Mr. Gould, so he referred it to the State Railroad Commission July 6. On July 11, the Commission informed him that the rate on sacked apples had been lowered to 10 cents per hundredweight or $2 per ton, with refunds to those who had paid the excessive rate. This permits the sale of an otherwise waste product and may make the difference between profit and loss on many orchards. The shipments affected by this particular rate are small, but the prompt adjustment points the way to the correction of other unequal rates now imposed on growers.

Elimination of middlemen by the help of Wells-Fargo is the plan recently inaugurated by the Texas Farmers' Union. Consumers, preferably in community organizations for this purpose, will place continuous orders for country produce with the express company who will turn these orders over to farmers' unions or other producers along its line, to fill. The express company will make reports of market conditions in the larger cities to secure more even distribution. This will prevent much of the waste due to oversupply and decay before consumption.

Fruit from Sacramento to Chicago in 140 hours via Western Pacific is the schedule recently inaugurated. This permits it to be sold on that auction on the morning of the seventh day.

Cannery Notes.

Lack of fruit is said to be the cause of closing the Sebastopol plant of the California Central Cannery Co. The operators were sent to the San Lorenzo plant.

The cannery at Grass Valley will open its season next week with peaches and beans, to be followed later by pears.

The Fresno cannery has been putting up Tuscan clings.

Deciduous Shipments.

A carload of apples from Sonoma county to China and six more for South America show that the Gravensteins are being appreciated abroad.

Many Gravensteins on the San Francisco market this week are green and unattractive, but sell well because they are earliest. Storage apples have a vigorous competitor now.

Handsome posters announcing the Gravenstein Apple Show at Sebastopol for August 3 to 9, inclusive, were recently received in our office.

Mrs. John Zuur, of Santa Rosa, has made some fine spineless cactus jelly and other products which will also be exhibited at the Apple Show.

Plums by the carload are being shipped from Eldorado county, which is also sending out many peaches and quite a few pears and apples.

A carload of peaches was shipped from Chico to Seattle recently.

Germany is buying apricot pits at fancy prices from the upper Sacramento valley.

Vegetables.

The first of several hundred carloads of watermelons started from Chowchilla last week. Large shipments of cantaloupes also are going out.

Dinuba has been shipping carloads of cantaloupes, while Turlock has been sending watermelons to Oregon at $15 a ton. There is larger acreage and a heavier crop than last year.

Despite the tariff, the Visalia sugar factory expects a most successful year commencing last week.

Date Plantation.

Growing date palms on the unimproved sandy and alkali land in the southern San Joaquin valley is the object of a new corporation headed by W. R. Nutting and others of note. They wish to promote the industry there in all its phases, both by capital and by education.

Citrus.

One of our staff recently ate a couple of Florida grapefruits exhibited on the Chicago auction market, the last shipment there for the season. One from a lot that later brought a high price was a pretty lemon yellow and tolerably heavy. The other was heavy and covered with a dirty brown rust called by the southerners "nigger russet." That lot sold for a smaller price but was the most delicious for eating purposes that the writer ever tasted. Under present conditions, raise yellow grapefruit to sell, but eat the brown ones.

The new grapefruit from Florida will begin to be shipped late in September. Those growers are rapidly reaching California efficiency in spraying, fertilizing, and especially in packing.

A new citrus disease is alarming Southeastern growers to some extent, and a government man is making a survey of affected districts.

G. Harold Powell estimates that citrus consumption in the United States this season will be 25,000,000 boxes, 7,000,000 better than the previous high record. The hope of the planters of thousands of acres of new citrus orchards in California is pinned on an ever-increasing consumption. This the California Fruit Growers' Exchange is building up by aggressive advertising. Independent shippers are also profiting by this advertising.

The Riverside district has shipped 3721 cars of oranges and 49 of lemons this season to July 4. There is good demand on Eastern auctions for California lemons, but they say they can't get them, and so must use the inferior Italian fruit.

Grapes.

The Fresno district fair will feature table grapes this year.

Sutter county Thompson Seedless recently sold on the Chicago auction at $2.25.

Continual suphuring is advised at Lodi for mildew which seems very threatening.

Thompson Seedless were expressed from Dinuba July 9. A full carload was shipped this week, and it is said all of them will test over 18% sugar.

Imperial valley grapes have returned $4.50 to $5 per crate on account of earliness. From this section 150 carloads will be shipped if nothing goes wrong.

The State Viticultural Commission is advising that no table grapes of less than 17% sugar content be shipped, because the crop is estimated at

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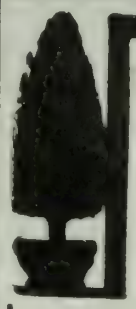

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2,000 cars more than last year, totaling about 8,000. Efforts are being made to improve the table-grape market by shipping only well matured fruit.

Vacaville shipped Baby Toe grapes July 10, about 10 days earlier than usual.

The Fresno district suffered heavily by the recent hot wave; the Associated Raisin Co. estimates a loss of 15% of the raisin crop.

Organize vs. 8-Hour.

The Tulare county local of the Farmers' Protective League, organized at the State Fruit Growers' Convention to fight the proposed 8-hour amendment, elected officers last week.

Horticultural Officers.

A. E. Beers will on August 1 succeed N. H. Wilson as Merced county horticultural commissioner.

O. E. Bremner, horticultural commissioner of Sonoma county, will hereafter make only general reports to the supervisors, but will have the cooperation of the county press in giving direct specific information to the growers at the time they need it. He is listing all the growers in the county.

Troubles.

Far northern California trains have been wrestling with caterpillars for a month. Horticultural Commissioner Wetzel of Siskiyou is reported to have found them very useful in communicating disease to the grasshoppers which have been eating the crops and furnishing sport near Grenada. On a recent grasshopper hunt, 3,000,000,000 of the insects were captured, but this was only a drop in the bucket, wherefore the disease was needed.

A national quarantine law was favored by the American Nurserymen's Convention at Cleveland and the Pacific Coast Nurserymen at Vancouver, B. C.

Government men killed over 400 ground squirrels in one day on one farm in Merced county. W. F. Rhoades, superintendent of the work, estimates that 8 of them will eat and destroy as much grass as a cow. They sometimes have 16 in one litter, so early destruction is economical. About 200,000 acres have already been treated in 7½ months; three years is the estimated time required to exterminate the pests there.

Peat Lands.

Reclamation of peat lands, crops for them, and use of the peat will be discussed in a good list of papers to be presented at the annual meeting of the American Peat Society in Duluth, Minn., August 20 to 22.

Grain and Hay.

A plantation of 5,000 acres of barley and wheat in Imperial valley yielded 40,000 bushels, heavy winds having threshed part of it. Three combined harvesters threshed the 40,000 bushels remaining, and six 6-mule teams hauled it to warehouses.

Contra Costa county has a shipload of corn on the way from Argentine Republic.

Glenn county rice is looking fine, according to E. L. Adams of the U. S. Department of Agriculture rice investigations in upper California.

Crop Prospects.

The prune crop on at least part of the Bidwell estate at Chico is better and bigger than expected. Wheat in this section has prospects several thousand bushels better than in the middle of June.

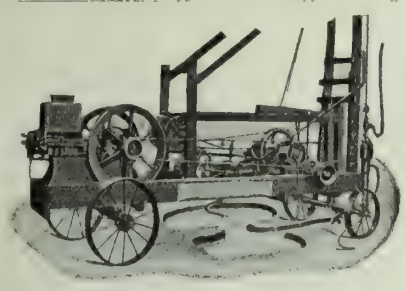
Estimates by the Hanford Journal value Kings county apricots, prunes, peaches, and grapes at over $2,000,000 this year.

Beans, potatoes, and onions promise banner crops in Santa Barbara county, according to Horticultural Commissioner C. W. Beers, who also remarks on the great and satisfactory extension of the alfalfa acreage.

Peaches and grapes in Sutter county are unusually heavy. Morrison Bros. of Bogne have contracted about 300 tons of Thompsons from 30 acres at $20.

About Paso Robles they have been threshing over 10 sacks of wheat per acre on an average. Barley has yielded as much as 30 sacks.

The British Columbia Department of Agriculture estimates its fruit crop at 25% greater than last year.



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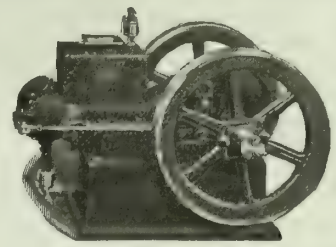

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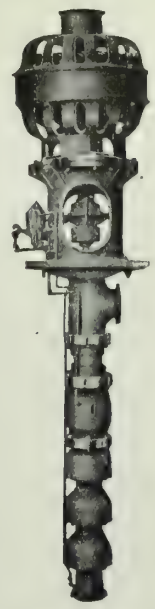

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Heard on the chicken farm: "Yep, one?" "Oh, he's a bookkeeper!" Just I got 125 of 'em and I get 124 eggs then the "bookkeeper" uncorked a every day!" "'Smatter with the other cock-a-doodle-doo!

A Reply to "What's Biting the Farmer?"

To the Editor: In your issue of May 30 appeared an article from a farming reader in Yolo who professes to accept the chance of a possible eight-hour handicap to farming with exceptional good cheer. "What is biting the farmer," indeed! As one of the employing farmers who may possibly be bitten, please let me at him for a few moments in the columns of the PRESS.

His arguments are founded on individual fancy, instead of fact, with one exception, viz.: the lack of representation of the producing farmer in the matter of fixing prices for his produce. What brand of "nerve tonic" is used by the writer from Yolo; or is it an injudicious use of the seductive California prune (which he raises) that accounts for the phenomenon of a farmer viewing with equanimity the proposed amendment and stamping with his approval a proposition that will work hardship in the harvesting of all crops, since under this proposed law an employee on any farm cannot labor longer than eight hours per day, for love or extra money from and for an individual employer?

His labor is all the farm employee has to sell, and he should be allowed to sell as much of his time as he sees fit, if he ever expects to accumulate anything or get anywhere in this world.

The farmer usually works ten or eleven hours in the field and will not pay out money for which he receives no value. The farmer should not be saddled with such an absurd piece of foolish legislation. As a matter of common and necessary economy he cannot keep two crews to obtain ten or eleven hours work in the field per day.

Prospective farm buyers will not invest in a State encumbered with such a handicap on farming activity. So much for the farmer. How will this proposed ordinance affect the man looking for a job on the farm?

The farmer in Yolo will have companions in other counties in his confessed inability to handle overhead expense and employ eight-hour labor. The writer fails to see how the proposed law will increase the number of farm jobs. It is easily seen that the measure will retard development and production. However, a word in regard to the average farm employee.

The steady, reliable man has a permanent position as soon as he is known, and he feels more at home in his own bed, by himself or with the rest of the boys in a good clean bunkhouse, than he would in the parlor bed-room in his employer's residence. Neither does he lose his self respect nor his place at the family table, by the act of milking a cow or grooming a horse.

The wandering, unthrifty, alleged farm help are out of employment and money when most needed. Not one in one thousand of them is mentally or physically capable nor is he ambitious to trade places with the average California farmer, whom he thinks is running a benevolent institution for his benefit. In his dealings with the farmer he demands every cent possible, and then some—with nothing left for the farmer in the form of depreciation and interest on investment.

This interest and depreciation is a permanent item, which railroad companies and large and small corporations are allowed by law to juggle with more or less honestly in their charges to the public. Whether the farmer gets his, is always problematical—depending on supply and demand of his particular product.

Without the assistance of individual ambition in conjunction with the proper idea of the brotherhood and fellowship of man, this world at this day would present a sorry existence for the human race. The writer believes that competition all along the line is proper and a boon to the consumer. It is the absence of competition in some quarters that the public gets wrathy about. But he does not believe that even in Yolo it is necessary for the farm proprietor to perform the chamber work for the horses, cows and other stock, that the employe may present a decorous and unodorous presence at the family table. This, the proprietor, under the eight-hour law, would be obliged to do; unless he could hold his men in idleness about four hours daily during the middle of the day—otherwise the proper time for doing such work would come before and after hours. The only alternative would be the uneconomical proposition of keeping an extra crew for two or three hours per day.

California certainly takes the premium as a producer of freakish attempts at deleterious legislation. This farmer who fights the battles of the soil alone (and somewhat longer than eight hours per day evidently) has the middleman and wholesalers as business adjuncts, not to say adversaries, on one side only. But if he believes in the fellowship of man, why does he relegate his neighbor farmer who unfortunately has to hire help (but who is doing more to alleviate this so-called misery) to a position receiving the cross-fire of the distributing wholesaler on the marketing side and the eight-hour employe, entrenched on the scene of his attempt at profitable production, with the shadow of the labor commissioner, with his legal guns trained for a chance of potting him for a fat fine or imprisonment for a slight indiscretion regarding the working of his help.

The answer is: When the "angel of destiny" was hovering in the immediate vicinity of the correspondent in Yolo, for some unaccountable reason, an unusual and grave error was made. This writer should have been ordained a missionary (together with the inspired legislator who was the prime factor in this prodigality with good printer's ink and paper), and sent to some wild and woolly uncivilized island; where their kind offices might be of some use to the world at large; where the natives are really miserable in their excusable ignorance and not as it is in this glorious State of ours, where the climate induces a free and easy existence to the unambitious and unthrifty; where there is an ever increasing demand for steady efficient help of the brand that believes in giving value in full for a good day's pay. L. B. JOHNSTON.

Elk Grove.

[Mr. Jonhston submitted his answer promptly, but printing has been delayed to give other writers their first shot. The reader will turn back to our issue of May 30 to find the fallacies which Mr. Johnston controverts. It is of course still a live issue, for the fight must continue until the November election.—EDITOR.]

A MAINTENANCE CAMP FOR UNEMPLOYED.

To the Editor: I have just finished reading your article entitled: "Cheer Up, the Worst Is Still to Come," and fully agree with you and Mr. Wayback. It is a most outlandish petition. But I have thought a good deal for three or four years over this unemployed situation, and to a certain extent this petition is on the right track.

Why not have in every county, say a rock crusher or sack mill with regularly employed engineer, foreman, etc., at a good salary, and then a law whereby any man who cannot find employment may go to this public plant and work—not at wages above the regular scale, but about 10 to 25% below it, so there will be no incentive for a man to stay there when there is lots of outside work. As for any Weary Willie who is looking for free meals and no work, just give him his choice between jail, bread and water, or a good job where he can sweat some, with plenty of money to feed and clothe him.

Furthermore, any farmer wishing good men could go to these plants and the foreman could very quickly give him all his best men, and of course as they would receive higher wages they would be glad to go.

In case there are no unemployed, beggars, tramps, drunks or any other men who need work, the plant could be shut down for a time and foreman and engineer given other public work for a time.

I have lived on the same farm all my life, out in the mountains, and I know that at certain times of the year really good men who want and need work can't get it and would be very glad to work a few months at quite low wages till they could find something better. Usually during fruit season the only men who have no work are those who do not want it, and I say they ought to have it, too, so they would not burden a community. SUBSCRIBER.

Mt. Veeder District, Napa.

[That is a rational proposition. Of course a sack-mill could not work economically with such a labor supply. It is too intricate a business.—EDITOR.]

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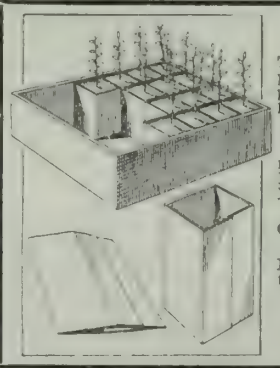

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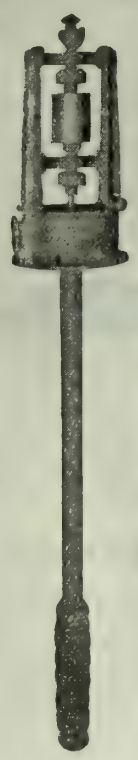

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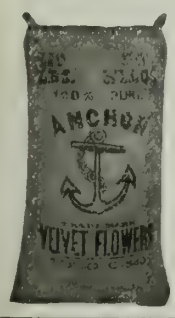

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Blake, Moffit & Towne, Los Angeles

Blake, McFall & Co., Portland, Ore

Co-Operative Creamery Operation.

[Written for the PACIFIC RURAL PRESS by J. P. MURPHY, Tulare.]

The lines of ink that have been traced on this subject would extend several times around the globe, and still there are people who wish to know about it and possibly there is much more to be written and read with interest.

Co-operation in most all agricultural pursuits, and especially in the creamery business, can be conducted with much success, but we must not loose sight of the fact that a co-operative institution must be managed on correct business principles, the lack of which has been the cause of many failures among co-operative creameries.

The first thing to be considered is, are there sufficient cows in the immediate territory to properly support a creamery? Then the dairymen interested should join in the enterprise, not with the idea of giving it a trial, but with the firm determination of making it a success. Care should be taken in the selection of the officials of the association.

They should be interested men of ability, and not possessed of selfish motives. On the ability of the manager, to a great extent, rests the chances of success or failure.

Five years ago the first real co-operative creamery in California, was built in Tulare county. The price of membership was $100 and no one but a producing dairyman was eligible.

The name of this association was the Dairyman's Co-operative Creamery Association. Up to that time the price paid for butter-fat, by private creameries, ranged about two cents below the Los Angeles butter quotations, but the first payment made by the co-operative concern, was three cents above the Los Angeles quotation, which price is about the lowest paid in its four years history since then.

For the year of 1913 this creamery handled 3,480,788 pounds of cream, containing 1,123,072 pounds of butter-fat, amounting to 1,307,738 pounds of butter. The average price for the year was 37.97 cents per pound of fat or 5.58 cents above the Los Angeles quotation. This statement plainly shows the success of the enterprise.

Besides operating the creamery this association, together with the Riverdale Co-operative creamery, has organized a butter selling house in the city of Los Angeles, known as the Challenge Cream and Butter Company. The house now handles the output of three creameries, amounting to about 9000 pounds of butter daily, besides small quantities of eggs and cheese.

[Mr. Murphy's remarks on the above subject are interesting as they show the financial advantages that are derived by dairymen in those sections where the co-operative creameries operate.

A point also worthy of consideration is the fact that the co-operative creamery brings the dairyman into close touch with the manufacturing end of the dairy industry and in this way he may be more easily educated up to the causes of poor butter-fat returns, which are in many cases more the fault of the dairyman himself than the buttermaker or creamery.

The results of the Dairyman's Co-operative Creamery, at Tulare, have in this respect been even more beneficial than merely through the increase in butter-fat prices, which Mr. Murphy refers to, as it has been the means of teaching the farmers the advantages of co-operative effort, and in this way has been largely responsible for Tulare county's rapid live stock growth and the foundation of such other associations as a cow testing association, which is one of the most successful ones in the State, as well as other progressive steps such as a proposed community breeding association, co-operative poultry association, etc.—EDITOR.]

THINKS THE TARIFF DOESN'T MATTER.

To the Editor: In your editorial some weeks ago entitled: "Asking Bread and Getting a Stone," you give a very erroneous idea concerning the present tariff and its effect on the farmer; not by incorrect quotations, but by incomplete. A long and careful study of our imports and exports forces me to believe that the tariff has no direct effect upon the price of what the farmer produces or consumes. To demonstrate your error in attributing the importation of corn to the tariff or rather lack of tariff, allow me to give you the imports of corn, oats and wheat and also the exports for two periods of eight months each, ending March the first, 1913 and 1914: Corn imported 1913, 800,000 bushels at 60 cents per bushel; 1914, 8,000,000 at 65. Corn exported, 1913, 31,000,000 at 60; 1914, 6,000,000 at 75. Oats imported, 1913, 600,000 at 45; 1914, 16,000,000 at 37. Oats exported, 1913, 32,000,000 at 45; 1914, 800,000 at 45. Wheat imported, 1913, 600,000 at 75; 1914, 1,600,000 at 90. Wheat exported, 1913, 67,000,000 at $1; 1914, 71,000,000 at 95. The corn in 1914 has been for five months on the free list: the oats are protected by a duty of 6 cents a bushel; the wheat was from Canada and paid a duty of 10 cents a bushel. Our corn export for 1913 was about our normal export, so there was in 1914 an outside market for 25,000,000 bushels of corn to be filled. If you will follow up our trade with Argentine you will see why that corn came to this country instead of going to fill the outside shortage. Corn imports increased 1000%; oats and wheat, protected, increased less than 300%.

As to our importations of cattle and beef, it is strange how quickly so many farms and newspapers discovered that we were importing cattle as soon as the present tariff went into effect, and what is even more strange, they have not yet discovered that we were importing about the same number under the previous tariff. We imported about $34,000,000 worth of cattle in the eight months ending March 1, 1913; about four-fifths of these were beef cattle. For the same period in 1914 we imported about $35,000,000 worth of beef and cattle. Now for fear that we might be tempted to attribute that million dollars of an increase to the lack of duty, we will look at the same period in 1912, where we find that we imported $22,000,000 worth of cattle. We see that we had an increase of $12,000,000 between 1912 and 1913, while under a high protective duty, and $1,000,000 between 1913 and 1914 under free trade in cattle.

It is a shame for you to take up your time and space in your truly valuable paper discussing anything that concerns the welfare of the farmer as little as does the tariff.

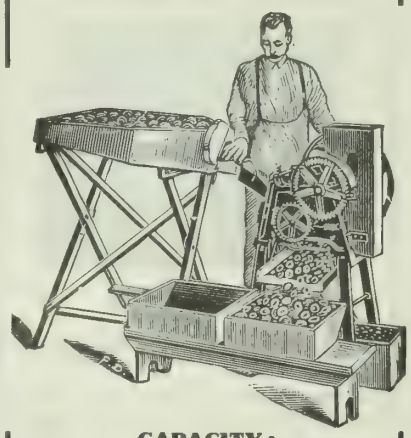
Allow me to thank you for keeping us informed regarding the proposed laws that we shall vote on this fall and for the energy and space you are giving to those things that are of vital importance to the farmer.

J. G. BILLER.

Lingerlong Ranch, Spadra.

[It does not seem to us that you justify your claims; however, you are welcome to your shot. Readers may judge whether you have hit anything or not. We will re-load at leisure.—EDITOR.]

Improved Fruit Pitting Machines



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Very best quality of selected second-hand water pipe and standard screw casing pipe. For quality and low price you make no mistake when buying water pipe of the Weissbaum kind. Largest pipe works in the west.

WEISSBAUM PIPE WORKS, 160 Eleventh St., San Francisco.

With the Live Stock Men.

The amount of money in cash premiums that will be awarded for live stock exhibits at the Panama-Pacific International Exposition has reached the sum of $352,950. This amount has been reached with the $5000 just offered by the American Jersey Cattle Club. In purses for harness races, almost $230,000 additional will be awarded.

Through the efforts of the Yolo county farm adviser, the swine breeders of Yolo county have recently formed a swine breeders' asociation, the object of which it to fight hog cholera. Those present at the first meeting agreed to the following rules: To post yellow signs in case of contagious diseases: to not sell, or move off from ranch, diseased hogs; to keep new hogs under 15 days' quarantine; to not let sick hogs have access to streams; to require disinfection of shoes of persons entering hog lots; to burn or bury carcases of all dead hogs, and to notify the State Veterinarian of any sickness believed to be infectious.

Reports from Manton, Tehama county, state that cattle in the vicinity of Mt. Lassen are dying at an alarming rate. It is presumed that either the fumes or poisoned water are the causes. Vegetation of all kinds is also said to be dying.

Reports from Imperial county state that there is an overabundance of alfalfa in that section this year and that more dairy cattle are badly needed. It is doubtful whether there is a dairy section in the State that has a sufficient number of dairy cattle to consume this year's bumper crops of alfalfa. In some ways the lessons of this year may prove valuable in future years, as it is now being demonstrated that the dairy cow and cream check are far more certain than the price of baled alfalfa hay.

County Live Stock Inspector Frank Griffith, of Kings county, reports that the live stock in Kings county for the past month has been healthy and that only one case of rabies was found during that time.

The University Farm at Davis has just received a shipment of 107 head of beef cattle which weighed on an average of 883 pounds. These cattle will be used in connection with feeding experiments as to the value of silage for finishing beef, and should prove highly profitable to the State at large. The University has also recently shipped from the farm at Davis four head of registered Duroc-Jersey hogs to Hawaii.

P. A. Kerrigan, of Butte county, has just sold 50 head of Shropshire bucks to the J. Parker Whitney estate in Placer county.

A 10% dividend has been declared by the Petaluma co-operative creamery. The directors state that they are well pleased with the showing made the first six months.

James McAllister writes from Chino that he has just sold the Bixby Land Co., of Long Beach, four head of registered Holstein bull calves. These bulls were all sired by one of the sons of the King of the Pontiacs which Mr. McAllister is using as his herd sire, and should greatly improve the quality of the Bixby grade herds.

A large sheepman of Winnemucca, Nevada, shipped 2,000 head of sheep to San Francisco during the past week.

E. J. Delorey, of Los Angeles, has been appointed a director of the State Agricultural Society, to fill the vacancy caused by the resignation of Charles W. Paine, who was elected secretary.

Prices on all live stock sold at the auction sale held on the C. H. Baker ranch in Tulare county, last week, were said to have been good, hogs in particular bringing good prices.

Liquidation of cattle, at the Portland Union Stock Yards last week, was heavy, with a good many southern steers in the run, the native stuff being of medium quality. Best grass steers sold at $7.10 for extreme tops; cows, $5.75 to $6; bulls, $4 to $4.50.

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In 1909, its first year, sold 200
In 1910, its second year, sold 300
In 1911, its third year, sold 665
In 1912, its fourth year, sold 900
In 1913, its fifth year, sold 2400
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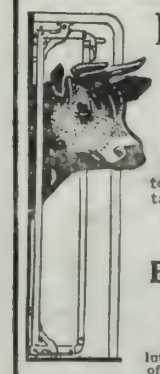

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DRIED BEET PULP

Nature's Gift to Dairymen

A TRULY WONDERFUL FEED

Larrowe's Dried Beet Pulp is the pure shredded root of the sugar beet, with only the sugar and water extracted; dried, sacked and ready for shipment in one hour from the time the beets enter the factory. It is clean, healthful, succulent, and cannot ferment or sour if kept in a dry place.

Larrowe's Dried Beet Pulp improves the health and increases the flow of milk. It furnishes more succulence than silage, greater digestibility, an abundance of carbohydrates—and is just what is needed with alfalfa to make a perfectly balanced ration.

Larrowe's Dried Beet Pulp is uniform in color; never blackened or burned. It is light and bulky; swells to about six times its original bulk when moistened. Cattle take to it ravenously.

Order a sack from your feed dealer today and try feeding it to one cow whose milk record you know—and watch results.

Write for booklet—"Profitable Feeding," with feeding instructions and information.

The Larrowe Milling Co.
607 Central Building, Los Angeles, Cal.

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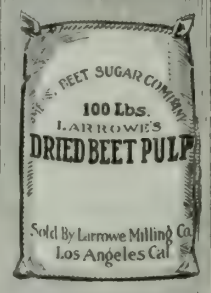

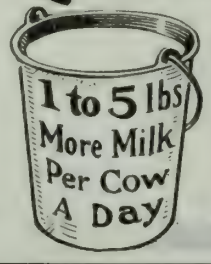

Larrowe's MOLASSES-Dried Beet Pulp is preferred by many feeders on account of its sweetness. Just the plain beet pulp with beet molasses dried. Splendid for fattening; also for horses.

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THE CELEBRATED DAIRY HERD OF BROWN & BRANDON,

in Hicks Valley, Marin County, California, consisting of

330 Ayrshire COWS
48 Ayrshire Yearling HEIFERS
100 Ayrshire Heifer CALVES
14 Ayrshire BULLS
32 Head of HORSES
400 Tons of HAY

And all implements and equipment found on an up-to-date Dairy Ranch. The ranch consists of 3,300 acres, but is divided into four separate places, each of which has its own house, barns, outbuildings, and every necessary implement and equipment for independent operation as a first-class dairy ranch.

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with a fair demand, and prime light veal calves at $7.85 to $8. The market on hogs was strong, good swine bringing $8.25 to $8.30 for tops, although there was a small run for the week. Sheep receipts were small with a strong demand for top grades. Prices were steady, prime wethers selling at $4.75 to $5, ewes $4 to $4.25, medium ewes at $3.25 to $3.75, and spring lambs at $5.50 to $6.

Dispatches from Colorado state that the Cudahy interests have shipped nearly 2,000 head of cattle to their ranch near Ordway. The report also states that this company expects to have the largest stock farm in the country for the breeding of butcher cattle.

A correspondent writes that Dan Wheeler, the sheep breeder of Reno, Nevada, has recently shipped 50 head of bucks to Argentine.

A carload of hogs and two carloads of cattle were shipped from Pixley, Tulare county, last week by the F. D. Campbell company.

The directors of the Fresno District Fair have decided to lay out the fair grounds at Fresno in much the same manner as the grounds of the Panama-Pacific Exposition have been arranged. This will provide modern structures for all exhibits and will include a modern dairy barn.

Buyers from Los Angeles recently shipped $10,000 worth of cattle from Ducor, Tulare county. This, as well as other large shipments from that place this year, are due to the new shipping corrals erected there this year.

The Western Meat Co., of San Francisco, has recently started a publicity campaign for the purpose of directing farmers' attention to the relatively small number of hogs grown in the State. They state in part that $20,000,000 is sent out of the State every year for pork, which could be retained in this State if farmers would raise more and better hogs.

Recent figures gathered by the water superintendent's office at Modesto show that 84.5% of the total area under irrigation is planted to alfalfa. As most of this is fed to live stock on ranches in that section, it is not strange that farmers there are prosperous.

PURE-BRED BEEF HERDS NEEDED.

[Written for the PACIFIC RURAL PRESS]

With the rapid growth of the dairy industry, made possible through the development of our large alfalfa areas, there has been a growing tendency among farmers to pay little or no attention to the establishing of pure-bred herds of beef cattle. The result of this lack of interest or attention is that today California is away short of well bred range bulls, and during the past few months there have been many carloads shipped into the State from the Middle Western sections.

It is commonly thought, and experience seems to justify the contention, that under the same conditions, on high-priced alfalfa land, the dairy cow of good breeding will return a larger net return in a year's time than the beef cow of equally good breeding.

On the above basis, then, it is no small wonder that farmers are not attempting to raise beef cattle, for after all, farmers are no different than others; they need the money, and where they have big money invested in alfalfa land, the dairy cow and hog seems to be their one best bet.

Unfortunately, however, all of the agricultural land in the State is not suited for the profitable growing of alfalfa, but many times does produce native forage plants in such large quantities that it is capable of furnishing fine pasturage for beef animals throughout the entire year. Sometimes this land is located in the foothill sections and many times on the lower river lands. In either case, however, the owners usually find it most profitable to use it as a beef cattle pasture instead of using it for dairy purposes.

In a majority of cases these lands are so situated that they are ideal for the establishing of pure-bred herds, of any of the beef breeds—first, because they furnish the wild grasses which are as nature provided the cow should be fed, and secondly, because they are usually handy to shipping facilities and are easily reached by the buyer.

To this class of land-owners, it is doubtful whether any more profitable business could be established than that of breeding beef cattle, for as we have before mentioned, the present market is far in excess of the supply, and there is every reason for believing that economic conditions such as the general scarcity of meat animals and the increasing population will make it imperative for the range men to continue the use of better bred bulls.

We recently heard one of our largest Short-horn breeders state that he had sold 150 head of bulls this year, and that he could have sold more had he known where to get them. These bulls as well as their mothers had been raised on land that is unsuited for other kinds of farming, and, being sold at the prevailing prices of this year, netted the breeder a handsome income on his investment.

With a State the size of California, having so much valuable pasture lands in connection with the vast areas of alfalfa land, there seems to be little reason for the importation of range bulls, which can be grown far more economically and of equally as good quality as our friends across the Rocky Mountains are able to do.

Although the dairy cow will likely always be supreme on alfalfa land, we should not forget that the beef cow must of necessity play an important part in the future of California's agriculture, and that the man who will reap the richest rewards from the breeding business will be he who has established his name as a reliable breeder at an early date.

HOWARD CATTLE COMPANY
BREEDERS AND IMPORTERS OF SHORT-HORN CATTLE.
85 New Montgomery Street, San Francisco.

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CALIFORNIA STUMP PULLER COMPANY
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AUCTION

43—HEAD HOLSTEIN COWS AND HEIFERS—43

On the Cooley Almond Ranch, 1 Mile South of Durham, Butte county, California, and 7 Miles South of Chico. Buyers from a distance take S. P. or W. E. train to Durham.

MONDAY, AUGUST 17, AT 1 P. M.

The owners are closing out their choice herd of Holsteins owing to the fact that they want to devote their entire property to orchard, as the land is too valuable for dairying.

While these cows are not registered, they are mostly pure bred. All Calves and Heifers are sired by a Registered bull who will be on the ground to show for himself. Property to be sold as follows:

13 Holstein Cows, aged 3 to 7 years, and as fine as can be found in the State. The cows have been carefully selected and tested until they are an extra fine lot of producers. They all show their breeding. Some of these cows will produce when fresh 9 gallons of milk by weight. These cows are large boned, healthy, and in fine milking condition. Several are just fresh.

9 Holstein Heifers 30 months old, all carefully selected, will come in the last part of August.

20 Holstein Heifer calves, 4 to 14 months old. A choice lot; all selected with care.

Registered Holstein Bull, 7 years old. He is certainly a fine individual, fine markings and will weigh 2500 pounds and well pedigreed. This animal is good enough to head any herd of cattle either registered or grade. Anyone looking for an animal to improve their herd can make no mistake in this animal, as he has been tried out and found good, as his heifers show.

Purchasers in the market for high-class dairy stock without any frills should not fail to attend this sale.

1 Sharples Mechanical Milking Outfit. Complete and in the best of condition.

1 700-pound Hand or Power Separator, and all dairy equipment.

Prospective purchasers are invited to visit the ranch prior to sale and see these cows milked daily at 4 p.m.

Terms cash or approved note.

Everything goes. Nothing reserved. The highest bidder gets his choice.

Correspondence solicited. Photos furnished.

COOLEY BROS., OWNERS, Durham, Cal.
W. E. JINKINS, Auctioneer.

HOLSTEIN-FRIESIAN BULLS

Having sold three of our dairies, we are offering for sale at a sacrifice **5 Service Bulls.** Also a few bull calves, seven months and under.

Price on application.

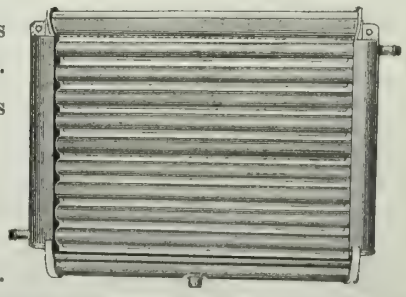
MILLER & LUX, Inc. **DOS PALOS, CAL.**
Colony Farm Dairy.

KELSEY TUBULAR COOLER

Special Prices on Milk Coolers and all Dairy Supplies **for cash.**

Kelsey Copper Tubular Coolers are made in all capacities.

Efficient—Sanitary—Durable



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San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

Founding a Purebred Herd.

[Written for the PACIFIC RURAL PRESS]

The great majority of our purebred breeders are men who have first owned grade stock, and have been brought into the purebred ranks, through the advantages derived from having owned one or more purebred sires, of prepotent character.

Situated a few miles from Davis, and the University Farm in Yolo county is the Lucerne ranch, owned by W. Fisk, who has been dairying with well bred grade Jerseys for a great many years, but who has only recently gone into the business of raising purebred stock.

Like others above referred to, Mr. Fisk has gradually grown into the purebred game, through having used registered bulls for a great many years and in that way was able to increase the production of his herd to a great extent. While the results from a butter-fat standpoint were entirely satisfactory by this system, the difference in prices received for the bull calves, was seen to be greatly in favor of the registered animal.

Instead of simply depending upon the merits of the female stock, to take him to the front, Mr. Fisk believed that the herd sire was the most important single thing in founding his herd and consequently spent considerable time in selecting his bull.

Finally the bull Wieland's Silver Marquis, sired by Golden Marquis of Oakhurst, and out of Golden Marquis Girlie, was purchased. This is a young fellow as yet, but the fact that he was awarded first prize as a junior yearling at the State Fair at Sacramento last year, and that he has good butter records back of him, on both sides, would seem to indicate that his offspring will be typey individuals as well as good producers.

Late last year, after having purchased the above bull, Mr. Fisk made a trip East, where he purchased about 30 head of registered Jerseys. Included among them was the bull Nobles Warder, sired by Nobles Boy. A number of the young females in the herd were sired by this bull and have every appearance of being fine individuals.

This lot was purchased from a breeder in Missouri who was selling out his entire herd, they being the result of several years careful breeding.

Numbered among this herd are many good individuals and a few cows with official tests back of them. Further official work will be done next year by Mr. Fisk, his location being especially favorable for such work, as it is close to the University Farm, and not nearly so expensive as it would be at a greater distance away.

There are 67 acres in the ranch, which is located along the banks of Putah creek. The soil is remarkably good alfalfa land and produces heavily of alfalfa which is the principal crop grown, although a small plot planted to spineless cactus is proving a heavy yielder and may be used as a part of the ration in future years.

Although Mr. Fisk does not find it necessary to furnish any better buildings or feed to the registered herd than he did for the grade cattle, formerly maintained, he believes in having sanitary and convenient dairy buildings and with that end in view will erect a modern barn and milk house, made of building tile, in the near future.

Silver Marquis 107001, Owned by W. Fisk, Davis, Cal.

In order to more evenly balance the alfalfa ration and to increase the tonnage of feed to the acre, a tile silo will also be built next year and with these improvements, together with the registered cattle and purebred Duroc Jersey swine, the owner hopes to have a breeding establishment second to none in the State.

THE CARE OF THE YOUNG FOAL.

If the mare foals in the barn, one should provide her with a roomy box stall with plenty of straw. Within an hour after the arrival of the colt it should be standing and getting its first nourishment. If it cannot stand, give it help, as the first milk is valuable not only as a food but also as a natural purge which rids the intestines of the meconium.

It is well to put a wide bandage around the body of the colt and protect the navel from becoming infected from the stable. Some use a dusting powder of equal parts tannic and boric acid on the naval before applying the bandage. The navel should be kept protected until it becomes dry.

If the colt strains considerably soon after birth one should relieve this suffering by warm water injections. If the first feces are very hard, a dose of raw linseed oil will be advisable.—L. C. BARNES, Colorado Agricultural College, Fort Collins.

SHEEP WITH NASAL CATARRH.

To the Editor: I would like to know what is the cause of nasal catarrh in sheep; also the cure, if there is any.—H. C., Brentwood.

ANSWER BY DR. E. J. CREELY, SAN FRANCISCO.

Coryza (acute nasal catarrh) is due to any local or general irritant. If the animal is not sick, inhalations of Vapo Cresoline or local applications of saturate boracic acid, several times daily. It may be caused sometimes by pasturing on alkali pastures if it is general.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

REGISTERED AND GRADE HOLSTEIN BULLS, from one to eighteen months old. Herd headed by Hartog Pontiac 48823-Rowena Maid Mutual 46304. Address Superintendent Whittier State School, Whittier, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warder herd bulls, both sired by $17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

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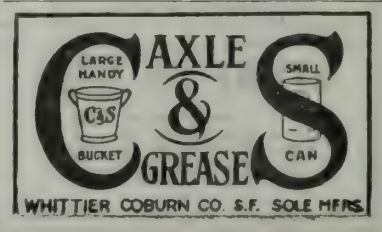

Hogs on Potatoes and Skim Milk.

[Written for the PACIFIC RURAL PRESS by WM. GUTHRIE.]

Potatoes, buttermilk and registered Berkshire hogs may not be a royal road to wealth, but it is the way Mr. J. T. Gish, of Louis, Inyo county, has chosen to bring unto himself prosperity.

Mr. Gish is one of those men that never lets an opportunity get past him. So a year ago when one of his friends was forced to dispose of his carefully selected herd of registered Berkshires, he bought. Long experience had taught him that the best was the cheapest in the end.

Although a raiser of hogs for many years, Mr. Gish says that it is no more trouble and expense to grow registered hogs, pound for pound, than the common stuff. The gains on the former are so much greater that he says, "even for the market it pays to breed the best." At present most all of the stock is sold for breeding purposes.

Potatoes have always been one of the principal crops on this ranch, but the price of potatoes is extremely low some years, and besides there are always culls and small ones, which off 20 or 30 acres will amount up to a good many tons every year. This loss took about all the profit out of the business, so a way was sought by which this waste could be turned into profit.

Mr. Gish has always been a firm believer in our experiment stations and agricultural papers, and it was from these that he got the idea of feeding waste potatoes to hogs. Experiments show that four pounds of cooked potatoes are equal to one pound of grain as a hog feed. Taking this as a standard, cooked potatoes were worth $7.50 a ton as compared with shorts at $30 a ton.

The cooking vat used is of sheet iron, 20 inches deep, 3½ feet wide, and 8 feet long and holds 1000 pounds of potatoes. Two concrete walls were first built, one under each edge, with wagon tire irons crossed between them, to keep the bottom of the vat from bending out of shape. At one a stand-pipe was placed; at the other a piece of sheet iron acted as a door. A large wooden door on hinges covered the vat. This also makes a handy place to scald hogs. The lid turned back can be used as a scraping platform.

To a vatful of potatoes three buckets of water is added. A layer of alfalfa leaves are thrown on top of the potatoes. When the steam begins to raise it causes the leaves to mat together, thus practically sealing the top. One armful of wood is enough fuel to cook the 1000 pounds of potatoes. After they are cooked, the stove pipe is covered to keep the air from circulating underneath the vat, thus cooling the contents. Last winter in the coldest weather it would keep warm for two days.

The buttermilk is obtained from the creamery at Bishop, seven miles away, and costs at the creamery one cent a gallon. About 100 gallons is received daily.

The amount of potatoes fed is governed somewhat by the amount on hand. This year potatoes were in abundance, and consequently the hogs were fed all that they would eat. Mr. Gish thinks that the sows suckling little pigs should have some grain as well, so fed them a little shorts mixed in two gallons of buttermilk twice daily and one eight-inch shovelful of potatoes twice daily. The rest of the sows received the potatoes twice daily and buttermilk once a day. The pigs between two and three months old received a ration of 1 pint of shorts and 1½ quarts of buttermilk twice daily and all the potatoes they could eat. After the potatoes are used up grain will be substituted.

The hogs are allowed to pasture on alfalfa in summer and are fed alfalfa hay in winter.

There are a great many who believe that the feeding of buttermilk and skim milk to sows cause them to farrow small, weak litters. This is true when they are given all they can drink of it and no grain. However, when fed along with grain or some substitute for it in small quantities we find that skim milk or butter milk have no harmful effects.

The average litter of Mr. Gish's purebred Berkshires is eight. As for strength and vigor, they could not be excelled. They make good growth, too. The average weight is 400 pounds at one year old.

This fall those who wish to see for themselves how buttermilk-fed hogs look will have an opportunity to do so, as this herd will be at both the Nevada and California State fairs.

The organizers of the Hog Raisers' Association of the Imperial Valley state that they are highly pleased with the results so far achieved by that association in its endeavor to stamp out all cholera in the county.

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Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.

INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as $150.00.
Engage your calf for use next fall. Your inquiries will be given prompt attention.
A. W. MORRIS & SONS CORPORATION.
Holstein-Friesian Cattle. Woodland, Cal.

Caring for Poultry in July.

[Written for the PACIFIC RURAL PRESS
SUSAN SWAYSGOOD.]

It is not generally conceded that hens, and poultry in general, require especial care in July that they don't receive in other months. But there are a few pointers that Pacific Coast poultrymen need to bear in mind, if they want to be in at the winter egg harvest.

THE MOLT.—The most important of these is to get the hens started to molt. As the hot weather in the East has tended towards raising the price of eggs here, there will be a temptation to keep all the hens laying that is possible and that will be a mistake. The hens should be culled close, in early July, all that are too old to keep for profit and all that are not up to the knocker in laying should be put in a yard by themselves and fed some good fattening feed. This will have a tendency to bring out all there is in them in eggs and put on flesh at the same time so that when put on the market there is something to eat besides bones.

Then separate the layers that are to be carried over, according to age, and put them on a light diet for a few days. Feed about half of one regular feed a day and let that be in the evening. Keep back all green feed for three or four days, then commence to increase the feed and feed every meal as usual and as much more green feed as you can get. This is a good time to sprout barley and feed the sprouted barley with good long sprouts, give grain and all, just in the matted condition it comes from sprouting. The barley is a great help towards making the old feathers drop, and coming after the fast, it is more effective than when fed without the fast. And barley when malted has a very high percentage of protein; the sprouting process is not exactly malting, but it goes through the most important change, that of turning the grain into a kind of milk.

Any food that has a high protein with a small amount of tough fibre is good for molting hens. But just at this time the hen's system is taxed more than at any other period so it is wise to save the extra work of digesting a lot of tough fibre that has no nutriment or use other than bulk.

Wheat bran contains more fibre than middlings, so this is the time to reverse the general rule by feeding rather more of good middlings than we do of bran. But the great thing to remember is that the hens need variety, during this period, more than at any other time. Plenty of mineral matter is also needed, and this is more easily obtained from the green feeds and animal products, such as beef scrap, ground raw bone, fish meat meal and all forms of animal foods that are easily digested.

Good sharp grit, oyster shell and charcoal should be provided so that the hens can help themselves to what they want.

In grain feeds, oats that have been sprouted or soaked may form a part of a meal once a day. Wheat, Egyptian corn and the sprouted barley makes a variety. Sunflower seed can be given once a day in small quantities as they are valuable for the oil in them, but on this coast we must rely chiefly on wheat and barley.

In animal foods, cracklings are about as easily digested as anything, and when they can be bought at three cents a pound are really better than beef scrap that we do not know the composition of.

SEPARATING THE YOUNG STOCK.—All the early hatched chickens should be separated now as it does not pay to feed a lot of worthless cockerels. And it pays less to have them running with the pullets, eating all the best of the feed and jostling and annoying the pullets at every turn. Better turn them into a yard by themsives, then go over them culling out all that are of no account as breeders. In the heavy breeds they bring a good price as there is meat enough on them to please customers.

If you have good stock, look them over very carefully for defects then cull them according. All side sprigs are only fit for table use, all rocks, having too many black feathers, too many spots on legs or stubs, or any color but clear yellow, should grace the table. It looks hard to do it sometimes when one has a promising bird except for just one little defect, but it is the only way to breed up, and away from defects. The way to perpetuate them is to keep breeding from them and the only sane way to get rid of them is to fatten such specimens for the table and see that they reach it.

Don't ever sell a cull as a breeder, even if you can get more for it than you would for market, it is sure to rebound to your discredit some time.

The man who buys your cull bird for crossing, may be entirely honest, but when his friends ask him who he got the rooster from he gives your name and address. If his friend happens to know good stock when he sees it, he sizes it up this way "if thats the kind of stock that breeder sells I don't want any of it," and he does not either. You see the man who buys the cull does not advertise the fact that he bought a cull. Oh, no; he bought his male from you, that gives him standing, and if he can sell that bird at a profit he can come to you for another cull.

ANOTHER THING TO DO IN JULY.—July is really a hard month on poultry so we want to help them out all we can and should see that every yard has some sort of shade, for the hours when the sun is strong. As I have often told you, the ever present gunny sack can be utilized in dozens of ways to make a cool shady spot for the chicks to rest in during the heat of the day. If you have nothing else and are pressed for time, just drive a few sticks in the ground and tack a few gunny sacks over that have been opened down one side and bottom. If you have a packing needle, sew several of these single burlap sacks together and then tack on to the sticks or almost anything.

Throw a few buckets of water on the ground in the evning and it makes a cool spot where the chickens will show their gratitude by meeting in force. All these little things don't amount to many minutes labor, but they add hours to the comfort of the poultry.

WHAT WE WASTE IN EGGS.

One of the most popular words of the present age is efficiency. Economic conditions have forced us to

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SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

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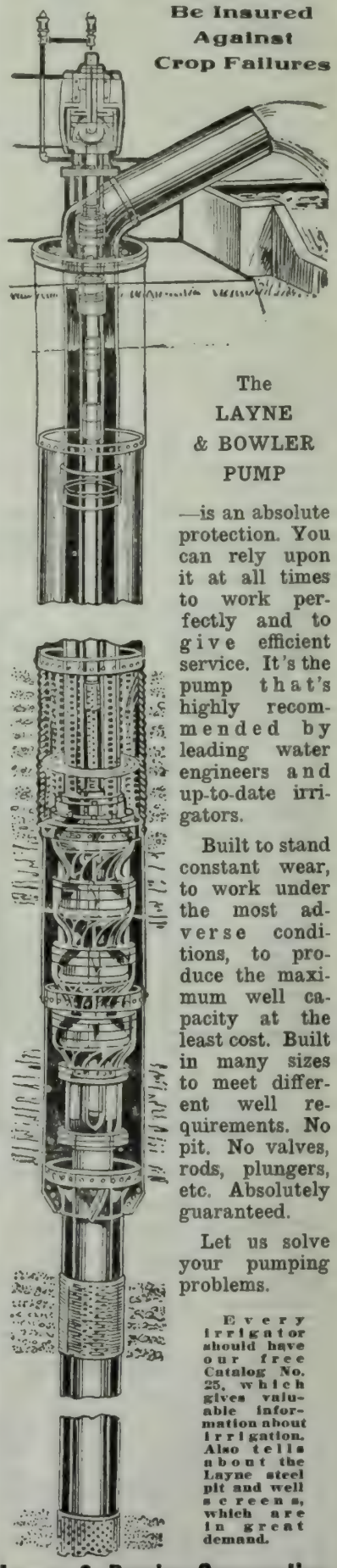

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be more careful of what we waste, both as individuals and as a nation. Especially is this true of manufacturing establishments. They are constantly trying to do away with the waste in little things, items that seem insignificant in themselves, but which amount to thousands of dollars in the course of a year. Lately this movement has spread to the farm and farmers are becoming enthusiastic disciples of this gospel of efficiency. Dr. M. E. Pennington of the United States Department of Agriculture points out one way in which the farmer can watch the small leaks in the matter of eggs. According to careful estimates about ten per cent of the eggs produced fail to reach the consumer. This means an annual loss of fifty million dollars. Part of this is due to carelessness in handling and part to carelessness in the matter of gathering the eggs. Even after the eggs get to market, they deteriorate a great deal before they are consumed. But think of what fifty million dollars would do if applied to rural education, to agricultural colleges, experiment stations, or to any one of a number of other things of which the farmer stands in need, today. How much of this fifty million do you contribute? Do you contribute as much towards the support of the country church as you do to this fund?

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Each case of eggs is stamped with the date they are gathered at the Owens Valley Poultry Co.'s ranch; and all are shipped to Tonopah and other Nevada points. There are 8800 White Leghorn layers, 4500 of which are pullets, the rest being 2 and 3 years old. They average 180 eggs each per year, according to Mr. Eaton who runs the ranch.

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ABOUT FEATHERS.

Goose feathers being more oily are apt to sooner turn rancid than chicken feathers. It is best to wash them well in hot water, using plenty of soap, and a cupful of ammonia to a barrel of water. Then rinse and dry.

White duck feathers sell at about 37 to 39 cents per pound, colored ones about 17 to 23 cents.

About ten ducks are required to make a pound of feathers.

The goose feathers are treated generally in this manner: After being spread in some clean, dry, airy place, they should be turned over with a fork every few days until thoroughly dried. If placed in bags and well steamed they are more valuable, as the steam has a tendency to purify them, removing much of the oily odor they naturally have.

It requires about four geese to make a pound of feathers.

It is said that between five and six million pounds of feathers are annually imported into the United States.

The average life of feathers in pillows is said to be about 20 years.

It is estimated that the annual consumption of poultry feathers exceeds 15,000,000 pounds.

In the "feather foundries" ten pounds of filth and dirt are removed from every 100 pounds of feathers.

Five averaged-sized fowls will yield a pound of feathers.

Goose feathers range from 60 cents a pound for white to 50 cents for mixed.

The best time to market turkey feathers is late in the fall, during the winter and early in spring.

Dry-picked turkey feathers command a better price in the market than scalded ones.

THE WONDERFUL EGG.

The average length of a hen's egg is 2.27 inches, its diameter, at the broad end, is 1.72 inches and its average weight is about one-eighth of a pound.

It is claimed that the yolk of a soft-boiled egg is a good substitute for cream in coffee.

Raw eggs are also used as a tonic, and especially recommended for weak, nervous women.

The white, beaten to a froth, with two tablespoonfuls of rosewater, is said to be excellent for inflamed eyes or eyelids.

The skin of a boiled egg, moistened and applied to a boil, it is said will in a few minutes draw off the matter and relieve the soreness.

Poultry says that the egg of the turkey is nearly as good as that of the hen, and that the goose is preferable to either for all culinary purposes. Ducks' eggs have a rich flavor, but are not as desirable to eat alone. They are, however, as good for all purposes of cookery.

VALUE OF LINSEED MEAL.

Linseed meal contains 30.9 per cent protein and 3 per cent fat, making it both a cheap and a nutritious ingredient for a poultry mash. It is especially valuable in the fall or during the molting period.

Linseed meal is the residue left after flaxseed has been crushed and subjected to extreme pressure to remove the well-known linseed or painters' oil. The cake that is left is ground to fine meal, and, containing some oil and being rich in nitrogenous elements, it forms a rich and healthful food for poultry.

Fed in the fall of the year it acts as a bracing tonic, largely assisting the dropping of old feathers and growing the new. Its analysis comes near that of meat.

Being of a very fattening nature, it must not be fed too strongly. An over amount is apt to bring on cases of looseness of the bowels, especially to young stock, while properly fed it will regulate the bowels and keep the stock in a healthful condition.

It is claimed by some that a teaspoonful is a good allowance for a hen, others say a quart of linseed is sufficient quantity to mix with a half a bushel of meal and bran, and some others recommend it in the proportion of about one to ten—that is, one part linseed to ten parts mixture of cornmeal, wheat, bran and ground oats. The writer has obtained best results by feeding it in proportion of five pounds to 100 pounds of ground grain and meat (the meat part being 15 per cent). This is given daily the year round as a morning mash.

The archbishop had preached a fine sermon on "Married Life and Its Duties." Coming out of the church two old Irishwomen were heard commenting on the address.

"It's a fine sermon his reverence would be after giving us," said one to the other.

"It is indeed," was the quick reply, "and I wish I knew as little about the matter as he does."

"I think, father, that you do Arthur a great injustice when you say that he is penurious."

Precocious Brother: "What's penurious, father?"

Father: "Why, penurious means close."

Precocious Brother: "Then you're right. That young man is awfully penurious when he comes to see sis!"

The head of a certain well-known family was recently approached by his son, just nearing his majority.

"Father," said he, "I want to have a talk with you concerning my future. I have decided to become an artist. Have you any objections?"

The old man scratched his head reflectively and replied:—

"Well, no, my son—provided, of course, you don't draw on me."

CLASSIFIED ADVERTISEMENTS.

Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

TREES AND NURSERY STOCK.

FOR SALE—Genuine Burbank Spineless Cactus cuttings, raised at Marysville, from slabs purchased of Burbank. Can furnish forage and fruiting varieties at $15 per 100 slabs. Send your orders to DARROW - WINCHESTER COMPANY, 1605 Telegraph Ave., Oakland, Cal.

SPINELESS CACTUS—Six fruiting and six forage varieties (12 plants) for $5. All Burbank productions, introduced 1911-1912. Special prices on lots of 100 to 1000 slabs. J. T. GREEN, Box 63, Morganhill, Cal.

AVOCADOS — Seedlings, 3 to 8 ft. 60c to $1. Budded trees, $3. All field grown. Discount on quantities. Magnolia Nursery, Whittier.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

LAND FOR SALE.

LANDS FOR RENT.
Party owning tract of 140 acres of river land in northern San Joaquin county, California, upon which is located an electric pumping plant capable of irrigating this area of land every six days with river water, will grade and check the same in long checks 100 feet wide for any tenant desirous of renting and paying cash or secured rent, for raising corn, beans, potatoes, onions or garden truck. Parties answering state references, rent offered and terms desired. Address Marion De Vries, Lodi, Cal.

VICTORIA, AUSTRALIA WANTS SETTLERS
Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

FOR SALE, BY OWNER—22½ acres; 20 acres in alfalfa, 1 acre family orchard. Irrigated by electrically driven centrifugal pump. Small house; one mile from S. P. depot. $250 per acre; half cash, balance in five years at 7%. G. S. Strickland, Fairmead P. O., Cal.

BEST SEED RICE FARM in Butte county. In crop. Independent, sufficient water system. Can be had for less than half its value. Sale being forced. No bigger bargain in this State. Box 218, Biggs, Cal.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg., San Francisco.

8-ACRE RANCH; 4 acres young prunes, 50 chicken houses; ideal situation; good house and outbuildings; $6000. F. PETRAY, Healdsburg.

WANTED.

POULTRY OR FRUIT—Young man, single, age 26, desires, by September 1st, responsible position on commercial poultry farm. Agricultural College training. Ten years experience. Would consider opportunity to learn something of the fruit business if work for winter is guaranteed. References furnished. State wages. Geo. Monteith, Box 135, Clint, Texas.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

WANTED—To rent Davis disc plow, ten 26-in. discs. Address Alexander & Kellogg, Suisun, Cal.

MISCELLANEOUS.

For Rent—To experienced dairyman, fine farm on Feather river in Yuba county, California. 100 acres irrigated alfalfa, 20 acres unirrigated alfalfa, 100 acres grain, corn and bean land. Will rent alfalfa land alone if desired or will plant all to alfalfa. References required. Address "B," P. O. Box 427, Marysville, Cal.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

IN THE FALL MONTHS every farmer requires manure, lime and fertilizers. Now is the time to figure on your wants. Address, for information, Box 10, Rural Press.

"SMITH'S PAY THE FREIGHT." To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

Shetland Ponies—Buy one for your children. E. H. Yocum & Sons, Bellota, Cal.

BEES

We offer 200 colonies bees and fixtures with or without 5 acres land suitable for berries, poultry, etc. Cash or easy terms of payment. Will lease for several years with privilege to buy if satisfied. Particulars on request. Spencer Apiaries Co., Box 12, Nordhoff, Cal.

OAKDALE IRRIGATED ACRES

Why not sell your high-priced land and buy finest irrigated lands in Stanislaus County on ten years time. 20-ACRE TRACTS, $350 DOWN, $350 YEARLY. Ideal for garden truck, alfalfa, fruit, dairying, chickens, ample water to high point each tract. Only 2 miles City Oakdale, with 3 railroads, canneries, creamery, markets, high school, 2 banks, 2 newspapers, good roads, splendid climate. Success and increased value assured. Every buyer satisfied and making good. Circulars free.

C. H. LEHMAN,
Marsh-Strong Bdg., Los Angeles.

The Home Circle.

Planning Meals.

Mabel Miskimen in a bulletin issued by the Ohio State University gives the following good advice on the value of planning meals in advance:

"Planning meals from one to three days or even a week in advance not only relieves the strain often experienced when friends drop in unexpecedly at meal time, but also insures more wholesome and satisfactory food for the family. With a systematic daily outline, more economy can be practiced in time, labor, purchase and use of material at hand, and greater satisfaction secured than when careless methods are used. The purchasing is made much simpler and better values are secured for the money when we get a clear idea of our needs before starting for the grocery or market. If a housewife gives no thought to what she will order until she reaches the store, she is apt to order the first thing that enters her mind, the only consideration being the ease and quickness with which that particular food may be prepared.

We so often do not realize that our cheapest foods, such as cheap cuts of meat, dried fruits and vegetables, cereals, etc., are just as wholesome and nutritious and often have a greater nutritive value than the more expensive foods, and that their use helps greatly to reduce the cost of meals. There is more art in preparing the cheaper foods to make them attractive and palatable than those more quickly made ready for the table.

We probably can see no economy of time in planning meals ahead if it leads to the use of foods which require more trouble in preparation, but, when we consider the palatable results, the wider variety possible in the preparation of cheaper foods, and the feeling of comfort which comes from having a clearly defined program, we are forced to acknowledge that it is economy in time, labor and health as well.

By a careful study and comparison of the quality of foods and market prices, we are enabled to select more advantageously and to take advantage of the lower prices. First of all, we want to know what our needs really are. Our wants are usually things we can get along without if we are studying economical buying. We must know the cost of our food and whether the price we are paying for eatables comes without our income. It sometimes happens that the money spent for food is entirely out of proportion to the income and to the amount spent for other things, such as clothing and shelter. A knowledge of nutritious cheaper substitutes for high priced foods, especially meats, is necessary if we are to practice the reduction of the cost of food for our families. Buying in wholesale quantities when prices are moderate saves money, time and annoyance.

Non-perishable foods may be bought in quantity provided we have a good store room. Sugar, flour, canned goods, spices, soap, vegetables, such as potatoes, and many other supplies may be bought in quantity. With a well stocked reserve shelf, no housewife needs to dread the appearance of the unexpected guest.

By planning the meals, left over material can be used to better advantage. No matter how much we enjoy certain articles of food, we do not care to have them reappear several times in the same form. With a little planning and forethought, dishes can be made over with but little expense and be just as palatable, and sometimes more so, than at the first serving. No food is economical, no matter how inexpensive, if it is not attracttve enough to stimulate the appetite, or if it is not prepared so as to be palatable and digestible.

The food problem should be an interesting one to the housewife. She ought to know whether or not her family is getting the right kind and amount of nourishing food. Each of our foods contains some of the nutrients required by the body to keep it in good repair and to keep it working, but it is only through the careful combination of these foods that we are able to provide the nutrients in the amounts needed. No none food contains the substances in the right proportion to supply the needs of the adult body. To provide these, we must have a combination of several foods.

A meal consisting mostly of starchy foods, such as cereals, starchy vegetables, bread, pastry and cake, is inadequate. So also is one containing eggs, meat and cheese with but little other material or one containing large quantities of fat with small amounts of the other nutrients. Foods cannot always be combined accidently in proper proportions nor can we follow strictly any definite standards of diet. A familiarity with food values and a consideration in a general way of dietary standards in their relation to the needs of each member of the family, their occupations, ages, sizes and personal peculiarities is necessary before we can plan well and secure the proper combination of foods in our meals.

Cooking Recipes.

Prunes With Rice.—Stew prunes tender, then pit and chop fine. Boil one cupful rice soft and dry. Place alternate layers of rice and prunes in a buttered baking dish, finishing off with a layer of rice. Dot with butter, dust with sugar and grated nutmeg and bake in a hot oven. Serve with hard sauce.

Creamed Sweet Potatoes.—Boil five medium-sized sweet potatoes. Peel them, cut in eighths and put them in a saucepan with one heaping tablespoonful of butter broken small, sprinkle with a palatable tablespoonful of sugar. Pour over sufficient sweet cream to cover them, and place on the back of the range for fifteen minutes, shaking frequently.

Prune Charlotte.—Stew half a pound of the best prunes tender, then pit them. Line a buttered baking dish with thin slices of stale cake, then fill up with the prunes. Cover with slices of the cake moistened, dot with bits of butter and bake in a steady oven. When done, turn out on a pretty, flat dish and garnish with whipped cream, or dust with pulverized sugar and serve with cream.

Corn Cake.—Take one teacup of flour and half teacup of corn meal, one tablespoonful of white sugar, one and a half teaspoonfuls of baking powder, one egg well beaten, a little salt, a teaspoonful of melted butter, one cupful of sweet milk. Stir all together quickly, having the oven ready and the tin greased before you begin to mix the ingredients. Bake in a quick oven.

Date Bread.—Mix the white bread in the usual way, and just before putting it in the pans for its final rising take a piece of dough a little large than a quart bowl and knead in almost a pound of stoned dates, then let it rise and bake just like the rest of the bread. The molasses dates are better for this bread and be sure to have the dates in large pieces. Spread the slices of the bread with plenty of sweet butter and it is very good indeed for luncheon or tea; indeed, children consider it a little extra and prefer it to cake. It is certainly much better for them.

Ginger Cake—One and a half pounds flour, one pound molasses, one-quarter pound butter, one-fourth pound brown sugar, one ounce ginger, one-half ounce spice, one nutmeg grated, three eggs, a little lemon peel, and one pound seeded raisins. Mix the flour, sugar, ginger and spices together. Warm the butter and molasses and add to the other ingredients. Dissolve one teaspoon soda in a small half cup of warm milk, to which add the eggs well beaten, mix all thoroughly, pour into a buttered cake tin and bake in a moderate oven for one hour.

Strawberry Shortcake.—Sift a pint of flour together with a teaspoonful each of baking-powder and salt. Rub in an ounce of butter, add enough milk for a stiff dough, and bake in a greased pan for twenty minutes. Split in halves, butter and place one-half on a platter. Cover with strawberries and sprinkle with sugar, put other half on, repeat the berries and sugar, and cover with whipped cream.

Strawberry Gelatin.—Cap and crush one quart of clean berries, and cover with half a cupful of sugar. Let stand for an hour and then press out the juice. Soak two tablespoonfuls of granulated gelatin in half a cupful of cold water for two minutes. Dissolve in a cupful of boiling water. There should be about two cupfuls of strawberry-juice. When the gelatin is dissolved, add this strawberry flavoring and whip with an egg-beater till it begins to thicken. Meantime, have ready one pint of whipped cream. Fold this into the jellying mixture. Line the bottoms of the jelly molds with halves of fresh strawberries, pour in the gelatin, and set away to chill. Serve with plain or whipped cream.

Stuffed Cherry Salad.—After removing the pits from cherries with a cherry-seeder, stuff with pecan meats, walnuts, or filberts, or with cheese. Arrange on individual dishes on endive or romaine leaves, and serve with French dressing. If nuts are used, a Roquefort dressing is excellent—French dressing with a tablespoonful of crumbed Roquefort added.

Sleep With Eyes Open.

Most people sleep on their sides, with the knees drawn up.

Elephants always, and horses commonly, sleep standing up.

Birds with the exception of the owls and the laughing parrots of India, sleep with their heads turned tailward over the back and the beak thrust among the feathers between the wing and body.

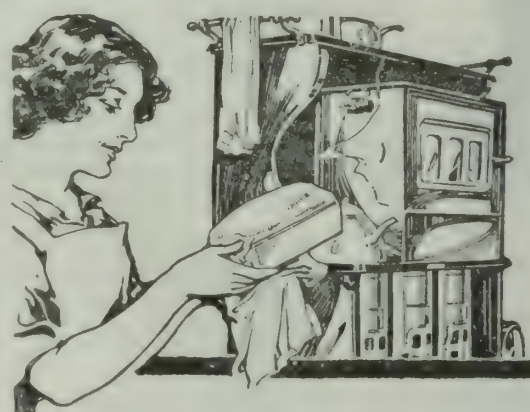
Storks, gulls, and other long-legged birds sleep standing on one leg.

Ducks sleep on open water. To avoid drifting shoreward, they keep paddling with one foot, thus making them move in a circle.

Foxes and wolves sleep curled up, their noses and the soles of their feet close together.

Hares, snakes, and fish sleep with their eyes wide open.

Owls, in addition to their eyelids, have a screen, that they draw sideways across their eyes to shut out the light, for they sleep in the daytime.



Bakes to Perfection

"I had no idea this Oil Cook Stove would bake bread and cook everything just like my steel range. But it does. And best of all my kitchen stays cool these hot days. Besides, there's no coal or wood or ashes to lug. Oh, I'm delighted with it."

New Perfection
OIL COOK STOVE

It bakes, broils, roasts and toasts—perfectly. It does all that any wood or coal stove can do—and at less cost. It doesn't smoke; doesn't taint the food. Clean, safe, convenient. Ask to see it at your dealer's.

FOR BEST RESULTS USE PEARL OIL

STANDARD OIL COMPANY
(California)

Our Young Folks

The Letter Joe Lost.

Joe paused by the clump of lilac bushes and felt in his pocket for the letter which he had taken from the postoffice. It was not there!

He dropped his handful of barberry sticks and a bunch of yellow cowslips beside the stone wall, and hurriedly searched through all of his pockets. Then he started back toward the postoffice.

"Hello, Ed!" he cried, almost running into his chum. "Haven't found a letter, have you?"

"No. Where'd you lose it?"

"If I knew, it wouldn't be lost, would it?" asked Joe, scornfully. "Come on back with me, Ed, and help me find it."

"Grandpa would say you might as well look for a needle in a haystack," laughed Ed. "Why, Joe, we went down in Bard's meadow to pick cowslips, across the brook and climbed Laurel hill to get barberry wood for our bows and arrows, tried to catch the turtle down by the pond, and stopped to see Harry's puppies."

"That's so," agreed Joe, "and probably the wind has blown it away. But I'm going to look, anyway. I don't see how it ever got out of my pocket."

The two boys hastened to the Corner, where the little country postoffice occupied one corner of Beaman's grocery store. They asked all the children whom they met if they had found a letter. Then they visited the meadow, Laurel hill, and the pond. It was getting late, and Joe had not yet been home from school.

"We may as well give it up, Ed," decided Joe at last. "I will go through Harry Marble's back yard, and if isn't there I'll have to tell mother that I've lost it. I noticed that it was from Avon. Aunt Annie often writes to mother, so I guess it wasn't very important."

"Well, you are foolish!" cried Ed. "Tell your mother and see what a lecture you'll get! I'd say nothing about it. Least said soonest mended, grandpa says."

"Perhaps you are right," replied Joe, doubtfully. "Telling mother won't help matters any. It is lost and that's all there is about it."

Supper was waiting when Joe reached home.

"Where have you been, Joe?" asked his mother. "I was getting worried."

"Been cutting some sticks for arrows, stopped to see Harry's puppies, and picked these flowers for you," explained Joe.

"The flowers are bright and springlike, but remember that you must not loiter so long on your way from school," said mother, firmly.

Thoughts of the lost letter haunted Joe. Conscience kept whispering, "You ought to tell! You ought to tell!"

"I hate the word 'ought,'" said Joe to himself. He ate very little supper.

"Are you sick, Joe?" asked his mother, anxiously.

"Well, I don't feel real good," admitted Joe.

"You have been playing around the ponds and damp places. If you are not careful, you will get sick."

After supper, Billy Thurston ran over and invited him to ride to Brockton in his uncle's automobile. But mother said "No," very decidedly, and a sober-faced Joe went very slowly upstairs to bed.

Two weeks later, Joe's mother was mending his school coat. Something made a crackling noise inside the lining as she was sewing up a hole in the pocket.

Reaching in, she pulled out the letter for which Joe had searched.

"Come here, Joe," she called, after she had read the letter. "Did you take this from the postoffice?"

"Yes'm. Who found it? I thought it was lost and it wouldn't do any good to tell you," stammered Joe, looking red and confused.

"I found it," replied his mother. "You slipped it into a hole in the lining instead of into your pocket. You should have told me about it."

"But you wouldn't have found it any sooner, mother," argued Joe.

"I might have thought to look in the lining. Your father lost the latchkey that way once. After he got a ladder and climbed into one of the windows, he found the key safely hidden in his coat lining. But if you had told me that you had lost a letter from Aunt Annie, I should have written to her at once. I am sorry, Joe, but keeping a secret from mother has cost you a week's pleasure. Auntie's letter was an invitation for you to spend your vacation week in Avon. Cousin Richard had a birthday party on the fifteenth. It was not wrong to lose the letter, for accidents will happen, but you did wrong in not telling mother at once."

Joe looked ready to cry. It was a keen disappointment.

"Uncle Frank has a new automobile, and Richard's party was sure to be a dandy. School begins Monday and it's all over," he said, slowly. "I'm sorry I did not tell you all about it, mother. I might have known you would plan some way to make it all right."

That night Joe told the rest of the lost letter story to his chum.

"Just think of all the fun I lost by being afraid to tell mother! Say, Ed," he concluded, "I've made up my mind that it doesn't pay for a fellow to keep any secret from his mother."—Nellie M. Leonard in Zion's Herald.

The teacher was intent on the lesson, and continued impressively:—

"And vast swarms of flies descended on the land and came into the houses of the Egyptians and covered their clothing and their tables and all their food, but (emphatically) there were no flies on the children of Israel."

A small boy from the rear of the room interrupted:—

"Please, ma'am, there ain't now, either."

Office Boy: "There are two men out there, sir, who want to see you; one of them is a poet and the other is a deaf man."

Editor: "Well, go out and tell the poet that the deaf man is the editor, and let them fight it out between them."

"The man who gives in when he is wrong," said the street orator, "is a wise man, but he who gives in when he is right is——"

"Married!" said a meek voice in the crowd.

LARGEST GLASS DOME IN THE WORLD TO BE ILLUMINATED AT NIGHT.

An idea of the splendor and beauty of the Panama-Pacific International Exposition, which is to open at San Francisco next year, is given in this photograph of the huge glass dome of the Palace of Horticulture. This is the largest glass dome in existence, being 185 feet high and 152 feet wide. It is comprised of a steel frame with a wire-glass covering. The architecture of the Palace of Horticulture, which is 600 feet long by 300 feet wide, is of Saracenic origin, resembling the famous mosque of the Sultan Ahmed I. The dome is visible miles from the exposition grounds. At night it will seem like a huge bubble, being illuminated by giant searchlights playing on the glass from within.

DRINK "QUALITY" TEA AND COFFEE

From IMPORTER to CONSUMER direct by PARCEL POST

"CHA-MA" - - - - 60 CENTS A LB.
A FAMOUS GREEN UNCOLORED JAPAN TEA

"NIN-GAR BLEND" - 50 CENTS A LB.
A DELICIOUS BLACK ENGLISH BREAKFAST TEA

"SEE-LOE BLEND" - 75 CENTS A LB.
OF THE CHOICEST BLACK TEAS IN THE WORLD
PACKED ONLY IN 1-LB. ABSOLUTELY AIR-TIGHT TINS

"E-CIL-A BLEND" 1 LB. 40 C; 3 LB. $1.00
A CHOICE BLEND OF PURE COFFEE
PACKED IN AIR-TIGHT PACKAGES
ALL POSTAGE PAID BY US. MAIL ORDERS TO

THE WM. J SCHROTH CO.
112-A MARKET STREET SAN FRANCISCO, CAL.

THE STEPHENSON PATENT COOLER.
NO ICE REQUIRED.
Perfect ventilation.
Absolutely sanitary.

Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.

L. ANDERSON CO., Mfrs.,
MARTINEZ, CAL.

TEACHING PAYS
Teachers Receive From $70 to $150 Per Month and Have a Pleasant Occupation - Free Catalog
PREPARE AT
WESTERN NORMAL
STOCKTON, CAL.

MISS HEAD'S SCHOOL
2538 Channing Way, Berkeley
Boarding and day school for girls. Catalogue sent on request. 27th year begins Aug. 18, 1914.
MISS MARY E. WILSON, Principal.

A.C.C. COFFEE
OH! SO DIFFERENT!!
Roasted and Packed the day Sent to You
3 lbs. in air-tight tin for $1.00
Delivered post-paid to any address within 150 miles of San Francisco or $1.10 delivered within 600 miles. The reduced parcel post rates enable us to make the above special offer. 1lb. Tin 40c, postpaid
Price list of our celebrated TEAS on application.
The Anglo-Ceylon Co.
244 California Street San Francisco

NOTICE OF REMOVAL OF PRINCIPAL PLACE OF BUSINESS.

Pursuant to the written consent of the holders of more than two-thirds of the capital stock of Roberts Brothers Company, a corporation created and existing under the laws of the State of California, which consent was duly filed in the office of said corporation at the Sheldon Building, First and Market streets, in the City and County of San Francisco, State of California, on the 6th day of July, A. D. 1914; and pursuant to a resolution of the Board of Directors of said corporation, which resolution was duly adopted at a meeting of said Board of Directors, duly called and held at said office of said corporation on the 6th day of July, A. D. 1914, at which meeting a quorum of the directors of said corporation were present and acting:

Notice is hereby given that the principal place of business of said corporation will, on the 1st day of August, A. D. 1914, be changed and removed from said City and County of San Francisco, to the City of Oakland, County of Alameda, State of California, on and after which date the principal place of business of said corporation will be said City of Oakland, at No. 465 Fifty-ninth Street.

This notice is published by order of the Board of Directors of said Roberts Brothers Company.

Dated at the City and County of San Francisco, July 6th, A. D. 1914.

DELOSE ROBERTS,
Secretary of Roberts Brothers Company.

DEWEY, STRONG & CO.
SCIENTIFIC PRESS PATENT AGENCY
PATENTS
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

THE MARKETS.

San Francisco, July 15, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

New wheat prices are expected to be generally quoted on the San Francisco market next week. These will range, according to present predictions, about 5c below the present quotations for old crop. New wheat is already being quoted at Portland, the ruling price there being 78c per bushel, equivalent to $1.30 per cental. Business on the local market is rather quiet pending the arrival of new wheat in larger quantities. It is reported from the north that Japanese buyers have already contracted for 10,000 tons of new wheat from Columbia River and Puget Sound points.

California Club, ctl....	$1.57½@1.62½
Forty-fold	1.60 @1.65
Northern Club	1.57½@1.62½
Northern Bluestem ...	1.62½@1.65
Northern Red	1.52½@1.60

BARLEY.

The barley market here is very firm with prices on the move upward. Very little barley is coming in here, though it is reported that some buying is being done in the country. A report from Colusa county reports sales of new barley at 90¼c, or about 8c over previous prices there. Locally prices have not advanced so much.

Brewing and Shipping.	$1.00 @1.05
Choice Feed, per ctl....	97½c@102½
Common Feed	Nominal

OATS.

The oat situation continues easy, with very little doing. The quotation on red feed oats has been marked down 10c. White are quoted as before, but with very little in the way of sales at that figure.

Red Feed	$1.00 @1.10
Gray	Nominal
White	1.25 @1.30
Black Seed	Nominal

CORN.

The corn market shows no change. Prices are still firm and any increase in the demand might bring an advance, but nothing of the sort is now in sight.

California Yellow	Nominal
Eastern Yellow	$1.80 @1.85
Eastern White	Nominal
Egyptian	1.80 @1.85
Milo Maize	1.80 @1.85

RYE.

There is little rye selling here, and no arrivals to speak of. Prices show no change.

Rye, per ctl.	$1.50 @1.60

BEANS.

There is little interest in beans now. The old crop is well cleaned up and the new crop is still so far off that futures are getting little attention. Reports to date as to the new crop are favorable.

(On wharf.)

Bayos: Cal., per ctl....	$7.00 @7.50
Mexican	4.50 @5.00
Blackeyes	7.75 @8.00
Cranberry Beans	4.25 @6.00
Horse Beans	1.90 @2.15
Small Whites	5.00 @5.25
Large Whites	3.90 @4.50
Limas	6.85
Pea	4.25 @4.50
Pink	3.75 @4.00
Red Kidneys	Nominal
Mexican Red	6.00 @6.25

SEEDS.

This is between seasons with all lines of seeds, and no changes of consequence are expected until the coming in of new seeds.

Alfalfa	12½@15 c
Brown Mustard, per lb....	3¾c
Canary	7 @ 7½c
Hemp	2½@ 3 c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Flour values here are unchanged. Reports from Puget Sound are to the effect that there have been inquiries for large lots for export to the Orient. If this export demand materializes, together with the promised exports of wheat, there may be a firming up in flour prices all along the Coast.

Cal. Family Extras....	$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY (New Crop).

The hay market is not very cheering from the seller's point of view. Dealers report continued heavy arrivals, including considerable quantities of off-grade hay, hay that has been more or less damaged by the rains. This is meeting with very poor sale and is in decided oversupply. There is, however, some inquiry for strictly first-class hay, and dealers are looking for this. Stock hay, alfalfa, and other low-priced lines are very inactive just now, as dairymen and others have not yet begun to lay in their winter stocks. Prices remain about as last week.

No. 1 Wheat, or Wheat and Oats	$ 9.00@10.00
do No. 2	7.00@ 8.50
Barley	6.00@ 8.00
Tame Oats	7.00@11.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.00
Stock Hay	5.00@ 6.00
Straw, per bale	40@ 50c

FEEDSTUFFS.

The consuming demand continues very light, the demand being even lighter than the supply, which itself is not heavy. The strengthening of the barley market might have been expected to make rolled barley firmer, but no advance has yet been made. The low price of alfalfa hay still tends to divert attention from feedstuffs.

Alfalfa Meal, per ton....	$17.00@18.00
Bran, per ton.....	25.00@26.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal..	26.00@27.00
Cracked Corn	41.00@42.00
Middlings	32.00@34.00
Rolled Barley	21.50@22.00
Rolled Oats	28.00@29.00
Shorts	26.00@27.00

Garden Truck.

VEGETABLES.

The demand for vegetables during the week has been rather better than earlier in the month, but as the supply was in most lines liberal, the changes have as a rule been downward. Tomatoes are lower, especially for the lowest and most fancy grades. The demand for tomatoes has been good, and notwithstanding large receipts the market is in good shape. Green peas are now quoted by the sack and eggplant by the lug instead of by the pound as heretofore. The general run of green corn is lower, the top figure being for Alameda corn, which has been in strong request.

Cauliflower, dozen	40@ 70c
Green Peppers, lugs.....	75@ 85c
Carrots, per sack.....	35@ 50c
Green Peas, sack.....	75c@$1.25
Tomatoes: Southern, crate	15@ 35c
Delta, lugs	40@ 80c
Beans: Wax	1@ 3c
String	2@ 3½c
Lima beans, lb	5@ 6c
Rhubarb, box	60c@ 1.00
Asparagus, box	1.00@ 1.25
Cucumbers, lugs	75c@ 1.00
Eggplant, lugs	1.00@ 1.15
Green corn, sack	75c@ 1.75

POTATOES AND ONIONS.

The potato market has been steady throughout the week with arrivals and the shipping movement both continuing large. The arrivals of onions have also continued large, but so far these have not depressed the market to any extent. New potatoes are quoted slightly lower.

Potatoes:	
River Burbanks .....$	1.00 @1.50
New Potatoes, lb.....	1¼@ 1¾c
Oregon Burbanks	75c@$1.25
Sweet Potatoes, per ctl...	2.50@ 2.75
Onions: Bermuda, crate..	2.00@ 2.25
New Red, ctl.....	2.00@ 2.25
Garlic, new, per lb.....	5@ 8c

Dairy Produce.

POULTRY.

The dealings this week have not been of very large volume, but the stock on hand has been fairly well cleaned up. All the changes noted have been upward, the advances all being on young stock.

Large Broilers	19 @20 c
Small Broilers, per lb...	19 @20 c
Fryers, per lb.....	20 @21 c
Hens, extra, per lb.....	17 @18 c
Hens, large, per lb.....	17 c
Small Hens, per lb.....	16 @17 c
Young Roosters, per lb..	22 @25 c
Squabs, per doz.	1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	6.50@ 8.00

BUTTER.

The butter market continues active. After some fluctuations, extras have become fairly steady at a cent and a half advance over the figures of a week age. Prime firsts and firsts have continued steady at the old figures for more than a week past.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	24½	24½	26	25½	26	26
Prime Firsts ..	23	23	23	23	23	23
Firsts ...	23	23	23	23	23	23

EGGS.

The upward movement reported last week has been continued, both extras and selected pullets being affected. Extras are quoted 2c higher than a week ago, and selected pullets 1c. There have been no changes in firsts.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	26½	27	26½	27	27	28½
Firsts	24	24	24	24	24	24
Selected Pullets..	23	23½	23½	23½	23½	24

CHEESE.

Fancy California Flats, per lb...	13½c
New Young Americas, fancy.....	15 c
Monterey Cheese	14 @15 c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter: Extras..	25	25	25	25	26	25
Eggs	26	25½	25	25½	25	26
Cal. Cheese: Flats ..	12½	12½	12½	—	12½	12½

Deciduous Fruit.

Fruits are now coming in in excess of old requirements, and prices have been dropping right along in order to increase consumption. Berries, aside from blackberries, have held up pretty well. Loganberries are particularly firm, the quality of the arrivals having been greatly improved. Apples are lower, owing to increased arrivals, but they are getting a little more attention than last week. Pears have been advanced. Black figs also form an exception to the general run of lower prices. These have advanced with a jump. White figs are lower. Watermelons are in good demand at last week's quotation, but cantaloupes are in oversupply and are lower. Grapes are coming in more freely and are moving well at lower figures.

Blackberries, chest .....$	1.50@ 2.00
Loganberries, chest	4.00@ 5.00
Raspberries, chest	2.50@ 5.00
Strawberries, chest	2.00@ 3.50
Apples, New Crop:	
Astrakhans, box	50@ 90c
Alexanders	50@ 85c
Gravenstein	50c@ 1.25
Crabapples	50c@ 1.00
Apricots, crate	50@ 75c
do lugs	75c@ 1.25
Pears, box	1.25@ 1.75
Peaches, crate	25@ 50c
do lugs	50c@ 1.00
Plums, crate	25@ 40c
do lugs	50c
Figs, white, single layer..	50@ 60c
Figs, black, do.....	75c@ 1.00
Cantaloupes, crate .....$	1.00@ 1.25
Watermelons, lb.	1¼@ 1½c
Grapes, crate	1.00
do lugs	1.25

Dried Fruits.

The dried fruit market continues fairly firm at very nearly the old prices. In spite of the slump in green peaches, the quotation for the dried fruit has been maintained, the adverse local situation being probably offset by the increased inquiry for choice peaches in the East. The apricot crop seems to have turned out larger than was at first reported, and it looks as though the fruit is being offered to the driers in increased quantities. At all events, the quotation has been marked down a half cent. Packers have suddenly discovered that the dried pear crop will be short. The canners are said to have discovered the pear shortage earlier and to have cornered the better part of the yield. As a result, dried pears are quoted a cent higher than they were. Simultaneously with the drop in the price of fresh white figs, has come a drop of a quarter of a cent in the dried article. Eastern buyers and Coast packers appear to have come to a deadlock over raisin concessions, and little business is being done just now. Spot raisins on the New York market are said to be scarce. Eastern buyers are also seeking concessions on new crop prunes, but so far as known, they are meeting with small success. Concerning the dried fruit market as it affects this Coast, the New York Journal of Commerce says: "Export business in new crop prunes seems to be at a standstill, although it is believed that Europe will need a good many more prunes than have been bought so far. The chief reason for the hesitancy on the part of European buyers is said to be the uncertainty as to shipments, the Tehuantepec route having been virtually abandoned and no certainty offered that regular shipments will be made via the Panama canal this fall. Inside quotations on October shipment are on a four-size f.o.b. bulk basis, 5½c for 40s to 60s, 5⅝c for 40s to 70s, and 5¼c for 60s to 90s f.o.b. Coast. Prunes out of store here are going steadily into consumption on small orders, the demand being, if anything, better than usual at this time of the year. Most of the purchases are made by interior distributers. Stocks of all sizes are light and in few hands, while the supply of 50s and 60s is said to be almost exhausted.

Reports from the Coast are to the effect that packers are endeavoring to induce growers to lower their ideas on peaches of the 1914 crop. It is said that they have been successful in securing several small lots at 4⅛c orchard run, but are trying to get the growers' price down to 4c. Apricots for forward shipment are neglected. The first full car of 1914 crop is expected here in about a week. Offerings are being made out of this lot at 12½c for choice and 12¾c for extra choice delivered New York.

There is nothing doing in August-September shipment raisins on the basis of the Associated company's quotations of 6⅛c on choice and 6½c on fancy seeded. In spite of positive assertions that packers affiliated with the company will not make any extra discounts nor permit brokers who work for them to do so, buyers at this end still seem to think that some way will be found to get around the prohibition that they will be able to cover fall requirements at a concession from quoted prices and terms. Some offerings of October shipment out of the new crop are still made by outside packers at 6½c f.o.b., but the Associated company has not yet made prices."

Evap. Apples, 1914.....	Nominal
Apricots, 1914	8½@ 9 c
Figs: White, 1914.....	3c
Black	Nominal
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	5¾@ 6½c
Peaches, old and new.....	4 @ 4½c
Pears	9 @10 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@ 4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

Shippers of valencias will do well to have in mind that heavy shipments of deciduous fruits will now begin to occupy the Eastern auction marts and that the situation should be carefully watched in order to prevent a slump by making too large shipments to any one market. Light supplies and decreased shipments have already effected a steady improvement in prices and if careful attention be given the

above phase of the situation, there is good reason to warrant satisfactory prices for the balance of the valencia crop.

There is little doing in California lemons in Eastern markets owing to extremely heavy shipments of foreign lemons to all the markets from Chicago east, and it is stated there will be half a million boxes available for these markets during the next thirty days. These foreign lemons, however, are being offered in wretched condition, much of the fruit being sold as low as 35c per box, some boxes showing 10 to 75% decayed, and until this upset condition of the lemon market is eliminated it would be impossible to quote prices in the Eastern markets which would be of any value. A later dispatch sums up the situation in three short words: "weak on lemons."

At the New York auctions on the 13th, 22 cars of valencias averaged $1.70 to $4.05. Four cars of Sweets, $1.35 to $2.30. At Boston, 14 cars of valencias averaged $1.85 to $3.50, and at Philadelphia 8 cars averaged $2.30 to $3.30.

There is not much movement in oranges in San Francisco, though old quotations are well maintained. Mediterranean Sweets are arriving in quantities and are regularly quoted. There is a wider spread in grapefruit owing to divergence in quality. Limes show a further drop from the top figure.

Oranges: Navels, box	$ 1.25@ 2.50
Valencias, box	1.75@ 2.50
Med. Sweets, box	1.00@ 1.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.00@ 2.50
Lemons, box	2.75@ 5.50
Limes, case	4.00@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing doing in nuts and no movement is expected until new prices are named.

Almonds, 1914 crop:	
Nonpareils	17 c
I X L	16 c
Ne Plus Ultra	15 c
Drakes	13 c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

The market here appears to be very firm, especially for the best grades. White honey was marked up a cent this week, other grades being still quoted as before. A good part of the crop has already been shipped out of California.

Comb: White	13 @14 c
Amber	10 @11 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

Some new wax is coming in, but is having no effect on prices, which remain as before.

Light	31 @32½c
Dark	30 c

HOPS.

Quotations are still held at the old figure, though it appears that most of the actual business is done at the lowest figure. Reports from Sacramento show sales aggregating 120,000 pounds at 14c. The Oregon market is a little higher, sales in that state during the past week being at 15 and 16 cents.

1913 crop	15 @17½c
1914 crop	14 @15½c

Live Stock.

Hogs are the strong feature of the situation. Receipts have been light and the buying figures have been marked up for both light and heavy weights. The cattle market is reported easier, though quotations are unchanged. The impending arrival of Australian frozen meat is said to be a factor in the increased arrivals here. The decreased consumption of San Francisco and vicinity at this time of the year also tends to make the demand easier.

Steers: No. 1	7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5¾@ 6 c
Bulls and Stags	3½@ 4½c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¾@ 9 c
100 to 150 lbs	8½@ 8¾c
Prime Wethers	5¾@ 6 c
Ewes	4¾@ 5¼c
Milk Lambs	7 @ 7½c

DRESSED MEATS.

Steers	10½@11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	11½@12½c
Ewes	11 @11½c
Suckling Lambs	14½@15 c
Dressed Hogs	13½@14 c

WOOL.

The wool market remains quiet locally, though there is some buying reported in the interior. Southern California sales are reported at 12 and 13c off cars at San Francisco, and sales are reported at northern California points at a cent or two more than quoted here.

Spring clip:	
San Joaquin	12@14c
Humboldt and Northern	16@21c
Calaveras	14@18c
Fall clip:	
San Joaquin	7@ 9c

HIDES.

The market continues firm, with most of the July take-off sold at full quotations. The Eastern market is firm with a good demand for Western hides.

Heavy Steers, over 56 lbs.	15 @15½c
Medium	15 @15½c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb.	15 @15½c
Light Cows, 30 to 50 lb.	14½@15 c
Kip	15½@16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	25½@26½c
Dry Kip, 10 to 15	24½@25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

Shippers appear to be holding off from this market, partly because there is not much demand here and partly because there is an improved demand in the country for horses suitable for farm work. Heavy stock is still in demand here, but other weights are not being sought. Prices are unchanged.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

SPECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., July 14, 1914.

Owing to the heavy receipts of plums in the Eastern markets, and on account of the poor condition of nearly all varieties on arrival, the peach market took a decided jump. There was quite a demand for Crawfords, which was not apparent two weeks ago.

Fearing that the market on peaches would slump, shippers got under cover by quoting futures at moderate prices. The crop is light and these future orders covered pretty nearly the entire shipments. The result was that a large percentage of the peaches was sold west of the Missouri river, leaving the auction markets bare, with a few scattering receipts daily, causing the market to jump to prices higher than at any time during the season.

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What few cars of grapes have been sold have brought fancy prices, arriving in good condition, well sugared.

The movement of Bartlett pears from the Sacramento river has been heavy for ten days, and the bulk of the receipts are now being unloaded in the Eastern markets at prices considerably less than the opening of the season. Indications are that the Bartlett pear market will hang around $2. This means a serious loss to speculators who have guaranteed $1.15 unpacked for the fruit.

From now on, a large percentage of the Bartletts will be moving to the canners, who have bought from the Sacramento River district alone approximately 5,000 tons. This will, to a certain extent, relieve Eastern conditions and be the means of equalizing the market.

Elbertas in car lots are moving from the lower San Joaquin valley, and the heavy movement from Placer county will be on in a few days. It is estimated that there are about 500 cars of Elbertas to be shipped within the next three weeks. Indications are that the demand will be fairly avtive, as Georgia shipments will be on the decrease by the beginning of next week.

Mildew is still prevalent in certain sections of the San Joaquin valley, and it is not unlikely that the tokay crop will be reduced 30 to 40 per cent.

The markets for the past week ranged as follows:

Chicago—Wicksons, 80c to $1.20; Tragedy, $1 to $1.80; Bartlett, $2.35 to $2.90; St. John, 85c to $1.21; Santa Rosa, $1; Burbanks, 65c to $1.25; Climax, 77c to $1; Royals, $1 to $1.40; Hales, 87c to $1.25; Hinori, $1.35; Tuscans, $1.70; Norman, 60c; Diamond, $1.50 to $1.70; Abundance, 65c; Thompson Seedless, $1.85 to $3.40; Ogons, 60c to 80c; Botan, 75c; California Red, 92c; German, $1.45; Crawford, 95c to $2; Simoni, 75c.

New York—Wicksons, 90c to $1.55; Tragedy, $1.15 to $1.55; Bartletts, Hf. $1.30 to $1.65, $2.55 to $3.50; St. John, 55c to $1.10; Santa Rosa, $1.15 to $1.65; Burbanks, 65c to $1.35; Climax, $1 to $1.25; Royals, $1; Hales, 55c to 90c; Diamonds, $1.20 to $1.50; Dukes, $1 to $1.40; Purple Duane, 75c to 80c; Decker, 85c to $1.25; Thompson Seedless, $2.60; Abundance, 65c; Hf. Clapp, $1.60; Sugar, $1; Georgia, $1 to $2.75; Botan, 75c; California Red, $1.10 to $1.50; Splendor, $1.10; Bradshaw, 80c; Washington, 77c; Crawford, 70c to $1.16; Simoni, 80c.

Minneapolis—Wicksons, 80c to $1.30; Tragedy, $1.15 to $1.60; Bartlett, $2.40 to $3.10; St. John, 55c to $1.50; Santa Rosa, 80c to $1.10; Burbanks, 65c to $1.10; Climax, 55c to 95c; Hales, 65c to $1.05; Diamonds, $1.70 to $1.80; Purple Duane, 65c to 90c; Bradshaw, 80c to 85c; Ogons, 70c; Italians, $1.45; Triumphs, 50c to $1; Sugar, 95c; Ogons, 65c to 75c; Botan, 65c; Red June, 65c to 80c; Satsuma, 85c to $1.10; German, $1.50 to $1.70; Washington, 65c to 70c; Crawfords, 95c to $1.50; Simoni, 80c

Boston—Wicksons, 55c to $1.75; Tragedy, $1 to $1.65; Bartlett, Hf. 75c to $1.85, $2.50 to 75c.; St. John, 55c to $1.60; Santa Rosa, 65c to $1.25; Burbanks, 50c to $1.55; Climax, 50c to $1.30; Hales, 80c to $1.55; Hinori, $1.30; Purple Duane, 70c to $1; Comet, Hf. $1.25 to $1.45; Diamond, $1 to $1.30; Red Astrichan, $1.25; Splendor, 75c to 95c; Sugar, $1 to $1.25; Ogons, 70c to 75c; Botan 65c to $1; Hf. Wilders, $1.40; Foster, 65c to 85c; Satsuma, 75c to 90c; Washington, 60c; Bradshaw, 75c to 85c; Crawford, 60c to $1.40; Thompson Seedless, $1.75 to $1.80; Simoni, 65c.

Philadelphia—Wicksons, 75c to $1.35; Tragedy, $1.05 to $1.40; Bartlett, $2 to $2.90; Burbanks, 70c to $1.05; Hinori, $1.25 to $1.45; Purple Duane, 65c

The number of cars of deciduous fruit shipped to the 13th inst. totals 2817 as against 2222¾ to the same date last year.

PUBLISHER'S DEPARTMENT.

While the number of new subscribers only numbered 188 for the past week, simple multiplication will show this to be an average of close to 10,000 per year. However, we intend to push this yearly total much higher and not only have the best edited and best printed farm paper in California, but the highest circulation—not alone in numbers, but also in the quality of our readers.

By the way, subscriptions have come in during the week from Australia, New Zealand, South Africa, and British India. It may also interest our readers to know that the PACIFIC RURAL PRESS may be purchased at the news-stands of Australia, New Zealand and South Africa.

There is no let-up in the demand for Professor Wickson's works, and a contemporary, the California Fruit Grower, referring to the recent issue of the seventh edition of "California Fruits and How to Grow Them," remarks: "The popularity of this standard work is evidenced by the fact that each edition is so soon exhausted."

If you have not sent for our special offer to subscribers regarding Professor Wickson's latest work, "One Thousand Questions in California Agriculture Answered," do so at once, as we want every California farmer to have one. It is the best farmer's reference book ever published. We receive many questions from our subscribers which are clearly answered in this book. Sometimes we reprint the answer, but we realize that this means a vexatious delay for the friends who want to know quickly and could know at once by reference to the "1000 Questions."

Mr. Frank Honeywell, manager of this paper, has been on an extended vacation, during which he has visited most of the large cities of Canada and the East, and it may be assumed has taken notes of comparison between methods of farming in the sections he has visited and those of California. He is now headed West and after a call at Los Angeles will be found at his desk about the latter end of this month.

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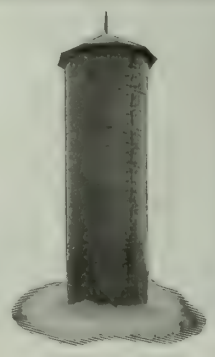

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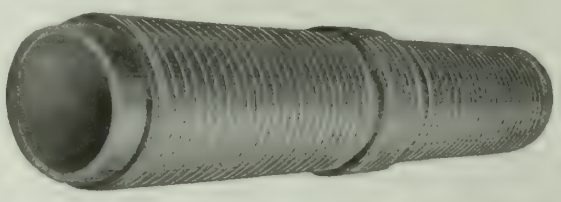

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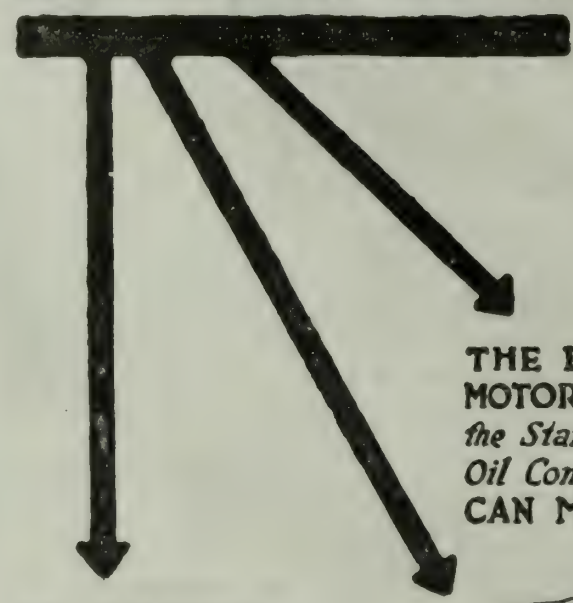

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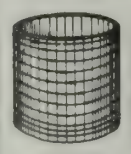

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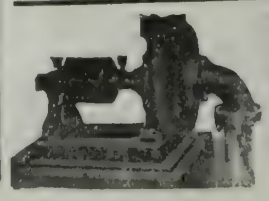

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PEERLESS IRON WORKS, Sacramento, Cal.

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THE PACIFIC RURAL PRESS

Vol. LXXXVIII. No. 4. SAN FRANCISCO, SATURDAY, JULY 25, 1914. Forty-Fou...

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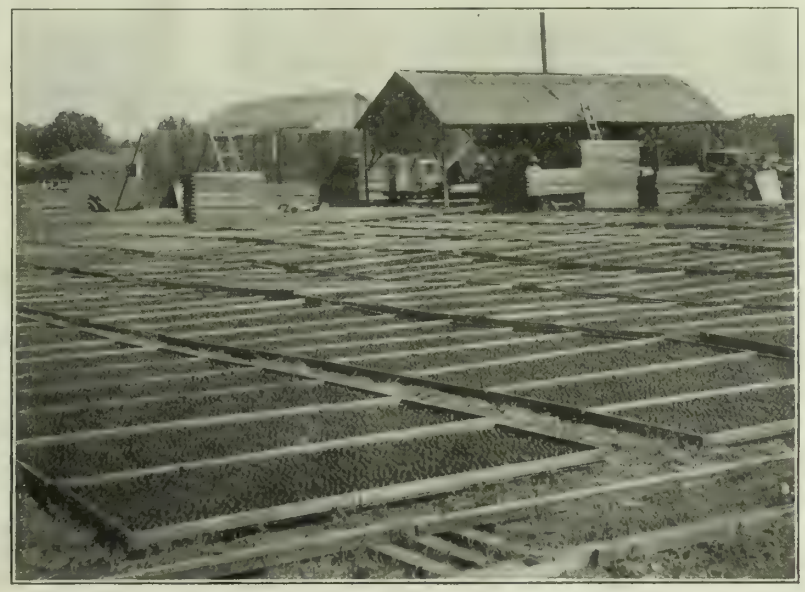
Prunes in the Interior Valleys.

[By L. R. BOEDEFELD, of Colusa, at the Fruit Growers' Convention at Davis.]

Prune culture in the interior valleys has passed the experimental stage, and is now a firmly established and successful industry. The haphazard planting of the prune on any kind of land that happened to be conveniently located, has stopped, and the land that is utilized for that purpose now is the soil that has been proved in the past twenty years to be the best adapted for prune culture. Those pioneers of the industrfy who were wise enough or fortunate enough to choose the proper kind of soil for their orchards, and took reasonable care of the trees, are now resting easily with a life-size bank account.

As Colusa is near the geographical center of the valley, and its soil and climatic conditions are typical, and as I have more first-hand knowledge of the industry as carried on there than in other sections, my paper will deal principally with the culture of the prune in that district.



Drying Prunes in Sacramento Valley.

Prunes are Dipped in Hot Lye Water and Run Over Short Needle Points Through a Grader Which Separates Them Into Two or Three Sizes and Spreads Them Onto a Tray Requiring Two Men to Handle.

A Good Soil.—The most important factor in the success of a prune orchard is the proper kind of soil. The soil in the Sacramento valley which has been proven to be the best for the prune is described in the United States soil survey of the Colusa area in 1907, as "Sacramento silty clay loam." This soil consists of dark drab to dark brown, micaceous, silty clay loam of somewhat sticky and heavy character, and generally six feet or more in depth. It is in most instances free from gravel or other coarse materials. Though normally of somewhat compact structure, it rarely puddles, is friable and easily tilled. There are thousands of acres of this kind of soil near the rivers and sloughs of the valley available for prune culture.

Climate.—As far as the climatic conditions are concerned, many of them seem to be ideal for the culture of this particular fruit. The almost total absence of killing frosts in the flowering season, and enough heat in the summer and fall to mature and cure the fruit, are the most important features. The rainfall of that section is normally sufficient to bring the tree to maturity. As a matter of fact, few if any orchards there which are now in full bearing received any summer irrigation before reaching maturity; but summer irrigation is necessary to get the best results, when the tree does begin to bear. I have in mind one particular 30-acre orchard about 20 years old, which until it ... years old did not produce more than two dried tons to ... The second year after it was put under irrigation, it produced six dried tons to the acre, and has been producing an average of almost five tons ever since. Even orchards which receive a thorough soaking in the winter, either from overflow or irrigation from the river during the high-water period, show a remarkable increase in productiveness when put under summer irrigation.

Irrigation Desirable.—The necessity for this irrigation is, I believe, due to the vertical percolation of the soil, the moisture dropping away from the feeding roots during the hot summer months, when the fruit is about ready to mature. Thus the tree may have sufficient strength to mature its fruit, but it has not the reserve power to bring forth good, vigorous fruit buds for the next season. Summer irrigation will give the tree this reserve strength and keep it growing well after the fruit has been removed.

Owing to the abundance of water obtainable from the rivers or wells, a great majority of the orchards have been brought under irrigation at a comparatively small expense. I know of many instances in which the increase in the crop and size of the fruit has more than offset this expense the first year. To obtain the best results, of course, the amount of water applied and the time of its application are of great importance. The lighter the soil the later it may be applied, but experience has shown that in very few instances should it be later than June 1. Otherwise the fruit may not ripen early enough to escape damage from the occasional early fall rains.

Tillage.—The cultural methods used in prune orchards are practically the same as used in all other sections of the State: that is, plowing as deep as the surface roots will allow, to give plenty of air to the soil bacteria, and then breaking it up to obtain as fine a mulch as possible for the conservation of the moisture, and then keep that mulch stirred up all summer. Before the fruit begins to drop, the ground is rolled, thus leaving a smooth surface to pick the fruit from.

Some growers plant vetch and barley in the fall and turn it under in the spring, and it has proven very successful in replenishing the soil with nitrogen and humus. This practice is not general, however.

The Root.—The myrobalan root stock in that section is the only

(*Continued on Page 78.*)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

ONE DOLLAR PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
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Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., July 21, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date*	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.11	62	48
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	102	56
S. Francisco	.00	.02	.01	70	52
San Jose	.00	00	.00	90	56
Fresno	T	T	.00	102	64
Independ'ce	.06	.06	.00	92	56
SanL.Obispo	.00	.00	.01	80	52
Los Angeles	.01	.01	.00	78	58
San Diego	.00	.00	.00	70	60

T. means trace.

The Week.

Aside from the activity of the office-seekers, whose remarkable consumption of gasoline and compressed air, of high temperature, was duly noted last week, there are still other instances of notable activity in California affairs. As may be seen in our Market Review on another page, this year's Eastern shipments of fruit are considerably greater than those of last year to the same date. There is a great rush with peaches which delights us. Peach-growers were inclined to be a little heavy in the heart because of last year's neglect of the fruit and because of the early reports this summer that Southern peach districts were likely to raise a barrier in the way of the California fruit. This foreboding is not being realized, for the Eastern markets are eagerly taking something like 50% more peaches than last year to this date. Canners are also unusually busy with peaches. One cannery in Kings county reports handling 80 tons of peaches per day—with other canneries in the peach districts probably working their plants according to their varying capacities. And of course this is only one item of current activity with fruits, which, however, indicates others. A few facts which may help the reader to size the industry were recently figured out by a Southern Pacific division superintendent. He took a single train of 43 cars laden with oranges, lemons, cantaloupes, strawberries, cherries, and onions. Twenty-eight cars of oranges held 11,200 boxes, or 1,750,000 pieces of fruit. Eight cars of lemons held over 2700 boxes—more than a million pieces of fruit. The citrus shipments totaled a million and a quarter pounds packed. This was but one of many trainloads. But we cannot indulge too freely in statistics in this place, even though they be of a very juicy sort. Read our market pages, whether you have things to sell or not: they give many hints of how great California is getting to be.

California's Monopoly of Classics.

And then, lest you be too thoroughly commercialized, read this, which we find in an exchange: "Professor Leonard of Harvard, in a recent address at Phillips Andover, said that the United States had produced during the last 25 years only three books entitled to rank as classics: Gertrude Atherton's 'The Conqueror,' Frank Norris' 'The Octopus,' and Jack London's 'The Call of the Wild.' And the professor might have added that all three of these writers hail from California." And it might be added also that Jack London is a California farmer, that Frank Norris based his "Octopus" an California farming, and that Mrs. Atherton is of a suburban family and wrote upon statesmanship, which is a favorite pastime of the California "farming classes." And then if Californians have produced during a quarter of a century all the classics which this continent has harvested, what a lot of ink all other creators of American literature have wasted, and what a lot of time we have lost in studying American poets and novelists all the way from New Hampshire to Indianapolis. But then professors are the men who know what's what nowadays, and a Harvard professor is the limit.

A Front Door or a Back Gate?

And this, too, reminds of a statement of a New York journal in these words: "Secretary Seward had a vision that in the course of time the Pacific Coast would be the continent's front door, as the Atlantic Coast now is. What he anticipated as the result of the development of Asiatic commerce has been hastened by the mere prospect of the opening of the Panama canal. For the first time in history, wheat sells at the same price in Portland, Oregon, and Chicago. Quotations on the miraculous new crop are exactly the same in both places, which means that the Pacific Northwest will get more than ever before, by about 8 to 10 cents a bushel. The explanation in the grain trade is that at least some of the crop may seek Europe by the all-water route through the isthmus. What is sure is that charters are offering at $2.50 per ton less to Europe than ever before, and the two faces of the continent have identical advantages in the world's market for foodstuffs. If the continent orients itself anew, the railway rate fabric will be reconstructed as well as the steamship rates. Because of water competition, the railways will take the same interest in the rates eastward from the Pacific as now westward from the Atlantic."

We are glad that Secretary Seward is getting credit now for his vision of half a century ago. The mole-eyes of his day could not see an American front door on this coast: they saw only a back gate, and not much of a gate, either. And such a form of blindness to a world situation seems to be only removable by the death of a couple of generations, perhaps.

A New Aqueous Vision.

As California seems to be the birthplace of American classic literature, so it may also be, ere long, renowned as the birthplace of world-statesmanship. If any one was in the world-peace business earlier than Edward Berwick and David Starr Jordan, we have no trade circular to show it. And if anyone beat David Lubin to the problem of world peace and prosperity on the basis of international distribution of food supplies, we never heard of that, either. Therefore, we claim that world-statesmanship is also a California classic. And now comes David Lubin, of California, United States delegate to the International Institute of Agriculture at Rome, Italy, the establishment of which he suggested to the King of Italy and secured from him the first Italian appropriation for the Institute, in which practically all nations of the world now participate. And as a corollary to this fully demonstrated theorem, Mr. Lubin now brings forward an international plan to regulate ocean freight transportation of the world. He would have all ocean freight rates regulated by an international commission similar to the Interstate Commerce Commission. Last week Mr. Lubin was in Washington interesting the California congressional delegation in studying the plan and pondering the dtails of it. We shall soon know, probably, how far Mr. Lubin can command the interest of the paternalistic outfit which is now running the Washington end of the country and can judge of the chances of getting anything done rather soon. We do not know a thing about ships, and sometimes miss our way on land, but it seems to us altogether unnecessary to discount Mr. Lubin's proposed regulation of international water traffic before knowing what it is and what support for it he has already secured from the national representatives with whom he is associated at Rome. We hope Mr. Lubin will spend a part of his vacation in California and if so his fellow citizens will find him ready to make clear the faith which is now underlying his actions. At any rate, no one can claim that his plan, whatever it is, is a menace to American shipping, for we have no interests to speak of in the trans-oceanic traffic. And where one has nothing to lose, he may have everything to gain. Therefore, a safe voyage for Mr. Lubin in his new craft to a California port.

Eight-Hour Literature.

Whether the eight-hour contributions we are now receiving will constitute the fourth Great American Classic from California or not, we are not quite sure. It lacks not for bulk, and many readers are evidently breaking the proposed law in writing the contributions—for which, we suppose, we and not they should go to jail. These writers smite the subject on both cheeks, but mostly on the right, of course. We give on other pages writings of both kinds up to the amount of our available space. It is not going to be possible to print all that we are receiving, and a number of interesting statements are ruling themselves out because the writers fail to give real names or full addresses. We are not running a "dead letter" journal.

The force of the opposition to the eight-hour law may be inferred from the earnestness with which candidates for the governorship of the State are declaring themselves against

it. This is a matter of importance, for though neither the present governor of the State nor the last legislature had anything to do with the proposition, because it arose by initiative petition, and though neither the coming governor nor legislature can stop it if it secures a majority of the votes in November, it is still desirable to ascertain the attitude of candidates toward such an unreasonable and arbitrary enactment. Readers can satisfy themselves individually on that point. Some candidates are using our advertising pages for declaring themselves on the subject. We are not soliciting such patronage, nor are we restricting it. The candidate can work all the inches he can pay for, and nobody will go to jail for it.

The Rural Sky-Scraper.

The reference to Frank Norris' "Octopus" above recalls the fictionist's license which the author exercised in suffocating his villain under a grain spout in a grain elevator on Carquinez strait. There was at that time no elevator there, nor elsewhere in California, though warehouses were abundant. While grain is handled only in sacks, there is no need for an elevator. But such a change has come over our agriculture during the last quarter of a century that our great valley is no longer an ocean of wheat, but is becoming an ocean of verdure of orchard, vineyard, truck field and alfalfa. And the result of it is that we grow only a fraction of the bread we eat, because most of the grain we do now grow is barley. Therefore, our mills must seek their wheat in other States, and whether it be white wheat from the far north or gluten wheat from the far southwest, it can be most cheaply brought in in bulk-cars from their elevators, and must be loaded into our elevators. Such a one of nine stories is now being planned to be built at Fresno for the Sperry Flour Company. The dimensions of the structure are 105 feet high, 63 feet long, and 38 feet wide. The material is wood, covered with heavy galvanized iron. The etsimated cost is $15,000. A giant steel elevator will carry the grain from the platform to the upper floors of the warehouse as is the way with elevators.

How to Get More Wheat.

We have noted with apparent complacency our local neglect of wheat-growing, but we do not feel that way. As wheat is advancing in price in spite of the colossal crop this year, it may duly appear that California should grow more wheat without neglecting other good things to which she is now committed. And when California goes largely into wheat again, it will be on a better basis than her early production: better seed, better tillage, more moisture, reasonable fertilization, and practicable rotation. And the result will be more wheat from the acre than has been had since the first breaking of the valley lands, perhaps. The place of alfalfa in a proper rotation will be recognized, and the relation of beet-growing also, as described by Mr. Girder in this week's "Constructive Agriculture," will be duly reckoned with. Perhaps, owing to the low price of alfalfa hay this year, some breaking of alfalfa land this fall for early sowing of wheat may be worthy the attention of some reader. When we work proper rotations, we shall have a more reasonable and more profitable agriculture.

Queries and Replies.

Querists must submit full names and addresses.

Cork-Growing in California.

To the Editor: In California journals of twenty years or more ago there were accounts of the introduction and planting of the cork oak and the anticipation of considerable cork production in your State. I would like to know what has been accomplished in that direction.—H. G., Paris, France.

There is no commercial cork-growing in California and nothing which we could call a cork industry. Cork trees have been planted here and there in California during the last fifty years, and have made satisfactory growth in different parts of the State, and specimens of satisfactorily developed cork have been exhibited chiefly as curiosities at our exhibitions, etc., but there has been no plantation of commercial areas. We do not know of any collective acreage of cork oaks in the State, nor is there at present any disposition to undertake cork production as a business. Our people are devoting their capital and energies to products which yield returns in shorter periods, such as agricultural and horticultural crops which are in constant demand. California has, therefore, not even made a beginning in the cork industry of the world—beyond the demonstration of the thrift of the tree.

Lime on Sour Land.

To the Editor: Would it be wise to put lime on land that has become sour when the trees and vines are growing? It is light land. How much to the acre, etc.? Would it require other fertilizer afterward to get best results?—J. P., Fowler.

It is safe enough to put lime on land during the growing season if it is not undertaken in too great amount. Five hundred pounds per acre properly distributed and cultivated in would be safe, and other applications of the same amount may be made annually as conditions seem to require. But it would be better to make the application during the early part of the rainy season.

The use of other fertilizers would, of course, be desirable later, either to stimulate wood growth or to promote fruit-bearing as the trees seem to require. Lime is not a substitute for other fertilizers. One of its chief purposes in California is in rendering the soil more fit for active root action and thus promote assimilation of other plant food by the plants or trees which may be put upon it.

We suppose you have demonstrated that the land has become sour. It is not usual for light land to become sour unless it has been too wet for a considerable period.

Walnut Blight and Erinose.

To the Editor: Am sending you a sample of some of our walnuts that are infested with some kind of pest and thought perhaps you could tell us the cause and cure. There are many places in this vicinity infected the same way. It commenced last year, I think. A good many leaves had lumps on them and some of the nuts these black spots on the end, but this year about one-third the crop are this way. —J. B. B., Winters.

The walnuts show the "blight" caused by the bacteria of the disease having entered the bloom. This disease has been in your county many years. It varies in injury from year to year, according to meteorological conditions. Probably the cool dampness of last spring accounts for the success of the germs in entering the nuts. The "lumps on the leaves" have nothing to do with the blight. They are caused by mites and their work is called "ermose." Fortunately, they are never abundant enough to do serious injury.

Woolly Aphis on Old Apple Trees.

To the Editor: I am sending a piece of a root of an old Red Astracan tree growing in our garden. It seems to be swollen from some disease. What can be done for it?—W. M., San Rafael.

The apple roots indicate the presence of the woolly aphis. The woolly aphis on the branches can be best held in check by spraying with the kerosene emulsion, tobacco extract, or other summer sprays which do not injure foliage, or by transplanting ladybirds as they do at Watsonville. In suburban gardens the woolly aphis on the roots may be prevented from collecting in too large quantities on the root crown by the use of about five gallons of fresh wood ashes, placed about the base of the tree at the beginning of the rainy season, or by using about three pounds of tobacco refuse in the same way. The rain leaches the lye from the ashes or the juice from the tobacco, both of which are destructive to the aphis. The soil around the tree may also be moistened with the liquids already mentioned for spraying. By keeping the insect thus reduced at the root crown, its presence on the tree itself will be reduced to a minimum. More than this, you cannot expect to do, because it is impossible to extirpate the insect, and it is present in nearly all the apple orchards and old fruit gardens in the State.

Diabroticas in Garden.

To the Editor: Under separate cover you will receive a few bugs that have attacked my beans and squash in a small vegetable garden and have eaten the leaves entirely. Please tell me how I can get the best of them next spring.—G. P. D., Rio Vista.

The insect is diabrotica vittata, sometimes called "striped cucumber beetle." It affects all the cucurbits, but fortunately is only occasionally very abundant. It can be poisoned by spraying with arsenicals, but the newer growth has to be protected by later sprayings. It can be discouraged by dusting the plants with slaked lime—perfumed with coal oil by stirring in enough for strong perfume without making the lime too wet for dusting. Other powdery insecticides, like carbolated lime, tobacco dust, etc., also accomplish this purpose. This chap is a brother of the so-called "green lady-bug"—diabrotica soror—but is seldom so numerous and troublesome.

Red Spider on Beans.

To the Editor: I am sending you a sample of bean leaves which seem to be dying from the ravages of very tiny insects about the size of a pin point. First it gives the appearance of mildew and later the leaves dry up and die. If you can, kindly tell me what it is and what is the remedy. My pea vines were killed by the same thing.—M. C., Monticello.

You have red spider and the treatment is dry sulphur dusted over the leaves and the dry soil so that the sun can vaporize it. If you had not so scrupulously refrained from giving your full name we would have advised you of the fact by mail, for every day of delay is a great loss in spider fighting.

Oranges East.

[Written for the PACIFIC RURAL PRESS.]

Over at Fair Oaks are some people who suffered from shipment of green oranges last season to Eastern markets. The following letter explains this:

To the Editor: Noting your inquiry, a firm bought oranges here last fall and began picking in October, ostensibly for the Australian market. I understand our growers were so told, but later I learned that the Australian business did not materialize and that the oranges were sent East. Certain it is, serious complaints were made by our customers on account of green oranges from Fair Oaks. It is also certain that "Superior California" oranges received a decided black mark because of immaturity when shipped. It is a ruinous and reprehensible thing to send out immature fruit, and amounts to industrial suicide if not commercial crime. Disaster came to the firm referred to, but the more lasting injury affects the growers who continue in the busines after the bankrupt shipper is forgotten.

W. W. HINSEY,
Secretary Fair Oaks Fruit Co.

This letter led to inquiry on this subject to see what folks at the other end think. The following sentiment is characteristic of answers received from buyers and sellers on all the big markets.

"The day of long prices on shipments of immature California navel oranges is past," said a New York agent of the California Fruit Growers' Exchange. "Florida has come up to her old-time citrus strength, and she can ship oranges to compete with your earliest from northern California. A man or woman who buys a sour immature California orange gets disgusted. He goes to Florida fruit and sticks to Florida. The California shipper has given California a setback, which is a direct help to Florida growers at your expense. You need a law that will prevent it."

BETTER GRADING AND PACKING.—Continuing on another line of thought, he said: "Northern California must also use greater care in grading and packing. The season there is so short that they can't keep packers the year around. They are usually compelled to use inexperienced help. The fruit is undersized and the pack is often flat. Buyers, both a private sale and on auction, simply pass up the flat packs when fruit from certain of the associations in southern California is on display for sale. I know brands from that section (southern California) which bulge regularly 2½ inches in the center. That always attracts the buyers.

"This talk of excessive shrinkage en route is mostly a cover for loose, faulty packing. If they are packed full and tight in California, they are full and tight when they get here. We know because we get such packs regularly from certain shippers."

BUYERS COMPARE FRUIT FROM ALL SECTIONS.—"I wish you would especially emphasize to your growers the fact that on this market as well as the others, the buyer of oranges has a tremendous advantage in that he can in ten minutes critically compare fruit from every section of your State. Every shipper must compete with all the others on the basis of merit alone. The shipper does not have the same advantage as the buyer, for with few exceptions he is busy at home and cannot travel over the State to see what the others are doing.

"Each auction city knows a very few brands which quite uniformly take top prices for the day. Perhaps shippers of the other brands do not know that their pack is inferior, but it would be money for them to find out; for the buyers know, and pay accordingly."

IRRIGATING OLIVES.

The following article is taken by permission from "Practical Horticulture," by George C. Roeding of Fresno.

Rest assured that the closer attention you give to the cultivation, irrigation, and fertilizing of your olive grove, the greater will be the results; your returns will be in proportion to the thought you give in maintaining it to its highest point of efficiency. As to the plowing and cultivating, no fixed rule can be laid down, except that thorough work in this direction is important.

Under average conditions and proper attention to the stirring of the soil, three irrigations would be ample for a grove in the San Joaquin valley. There are two periods which are important: the first irrigation should take place in April just before the olive blooms, and this usually occurs in the latter part of April or the early part of May; if the rainfall has been ample and the soil is well charged with moisture, this irrigation may be dispensed with. The second irrigation should be igven in the middle of the summer, and the third in September. This last irrigation should never be omitted. The difference in price between third-grade olives and strictly fancy is influenced by the use of water at this time.

Olives to mature properly require a good rain in early October, and when trees receive the stimulating influence of the rain from above and the artificial application of water to their roots, the olives run into the larger sizes; they are full of oil, and consequently the grower and the packer are both happy.

MAINTAIN FERTILITY.—It is useless to fool yourself by going on year after year to harvest crops of olives, no matter how rich your soil may be, without making some return to the land for the constant drain you are subjecting it to. The grower must regulate his expenditures for fertilizer by the condition of his pocketbook. But bear one point in mind: that none of us can live on air and water, and our trees are no exception to the rule. Feed them and they will feed you. Do not go on applying fertilizers year after year, after you have once got the habit, without putting in a cover crop occasionally to add humus and life to the soil. The fertility of the soil must be maintained at all hazards, and this is the simplest and cheapest way to do it.

Victor and Harry were sliding down the hill together, when the sled tipped over and both the boys fell off. Victor went to mamma, crying; but Harry was not hurt. "How did it happen, Harry," asked mamma, "that Victor was hurt so much worse than you were?" "I don't know," answered Harry, "unless it's because I've been vaccinated."—Youth's Companion.

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Apple Protection in Sonoma County.

[By O. E. Bremner, of Santa Rosa.]

We have previously given the culture portions of Mr. Bremner's essay on apple-growing in Sonoma county, prepared for the Fruit Growers' Convention at the University Farm. The following relates to specific treatment of pests of the apple in that region of the State:

Spraying has become the most necessary of all operations connected with the apple industry, for without control of insects and disease, the grower cannot expect marketable fruit. While this section has its full quota of ills, it yet lacks a few common to other localities in this State. The leaf-folder, in particular, has given no trouble, and the Tussock moth in only a few orchards. During the last two years of experimentation we have learned a few facts which are of particular benefit to growers of this section.

Local Wisdom Essential.—From our past experience we feel justified in forcefully condemning the general spray schedules as applying to all conditions and localities; we believe it gives the grower many wrong impressions. Spray calendars must be localized, and each locality have its own problems considered; this is one of the hardest features of advisory work, to persuade the grower to disregard advice applying to other localities which is not applicable to his own conditions.

The fall control of the curl-leaf aphis (A. sorbi) gives promise of placing this, one of the most serious of all our pests, under control, and by the same operation we combat several scale insects, a variety of moths, and moss. The most promising spray solution is crude-oil emulsion, and we strongly advise the home-made product, as we find it more efficient, easier to handle, and cheaper. This spray is used in strengths varying from 5 to 12½%, and should be applied between November 15 and December 1 to accomplish the best results. The spring campaign against this insect is practically sure, but is often uncertain on account of the difficulty attending a spray operation at just the right time. This spring application is made just as the cluster buds open, exposing the tips of the leaves surrounding the blossom buds. For this spray, whale-oil soap, a late spray of lime-sulphur, distillate emulsion, to which is added blackleaf 40%, and other solutions are used. We prefer the distillate emulsion, formula as follows: whale-oil soap, 3 lbs.; caustic soda, 1 lb.; engine distillate, 2 gal.; blackleaf 40, 5 to 7 oz.; water to make 100 gal. The distillate is added slowly when the tank is nearly full, with the agitator running. The blackleaf 40% is added last. It is sometimes necessary to use two applications when the trees come out unevenly, the second being applied about one week after the first. We have found the Friend angle-drive nozzle, working at a pressure of from 200 to 250 lbs., to give the best results.

For the control of codling moth and mildew as well as scab, we have used combination sprays, and for the past two years have added a spreader, and an adhesive in the form of a flour paste. A prepared paste manufactured by the Robinson Chemical Co., of San Francisco, has given us the best results so far, and this year we have used over 3000 lbs. of this paste. It spreads the sulphur and arsenical ingredients evenly and causes them to adhere so that late rains have very little washing effect. One application of iron sulphide or atomic sulphur, with this paste added, is as effective as two applications without it. Sulphur pastes applied just before blooming, then in combination for the first and second codling moth sprays, have given good scab and mildew control. By sulphur pastes we refer to such prepared sprays as atomic sulphur, iron sulphide, or milled sulphur.

Ordinarily three sprays for codling moth will suffice, but four are often advisable for late apples, and were necessary for a perfect control last season. In 1913 they were applied at the following dates, of course a small variation being allowed for local conditions, for we find eight to ten days difference in the blooming periods between the northern and southern portions of this district for each variety of apple: Calyx spray, April 1; second spray, April 15; third spray, July 15; fourth spray, August 10. This is taking Spitzenberg as the type apple. This time will, of course, vary in different seasons, but we believe the dates given to be about the average. The blooming period this season was at least a week earlier than last.

The second spray for such types as Gravenstein, Spitzenberg, and Baldwin occurs approximately with the first or calyx spray for such varieties as Wagner and Rome Beauty. Some use an extra spray about two weeks after the second. This is not necessary if the first two are thoroughly done, but does help in the control of the late-blooming varieties. While the Gravenstein is commonly said to be partially immune from the attack of codling moth, this statement is misleading, for they require at least the first two applications and often the third. By actual count on sprayed and unsprayed trees, it was determined on several varieties that from 30 to 52% of the first generation of worms entered by the calyx, showing the importance of this application.

The different methods of applying sprays is shown by an actual count; under one Gravenstein tree we found 196 windfall apples containing worms of the first generation, and this was not an exceptional tree. This grower claimed to have sprayed once; in other orchards where three careful applications had been made, from 2½% to less than 1% of worms were found, showing that, after all, the success of a spray campaign depends on the man doing the work. That the materials are not at fault, is shown by the fact that we tested in actual orchard work seven brands of arsenate of lead last year, without burning effects, and all gave good results. Perfect results can only be obtained by perfect application, and no one is to blame but the grower if disease and insects are not controlled, for spraying requires skillful and careful work, and is not a haphazard job which fills in odd times when no other work is pressing.

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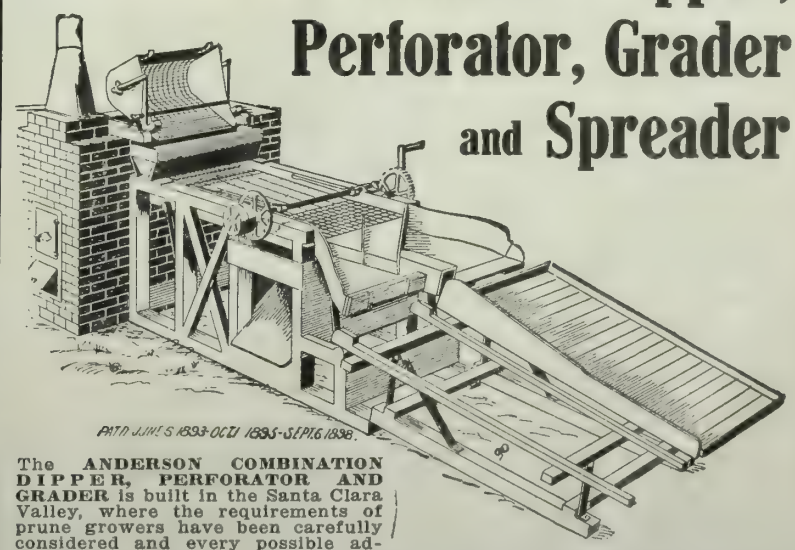

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PRUNES IN THE INTERIOR VALLEYS.

(*Continued From Page 73.*)

one which has been able to stand the test of time and adversity. Peach and other root stocks will sometimes make a better showing for the first few years so far as growth is concerned, provided, of course, that they live those few years, but, if I may be pardoned the expression, they cannot stand the "gaff." There are some diseases and insect pests infesting such stocks, and when it comes to withstanding drouth or excessive moisture they have not a chance with the myrobalan root. I have seen prunes on the myrobalan root go through two dry seasons with hardly enough moisture to wet the soil more than fourteen inches, and come out not much worse for wear. I have seen those same trees under 8 to 12 feet of water during the dormant season for a period as long as two months without any damage. So in my opinion, and I believe it is also the opinion of all prune-growers, the myrobalan root stock is the only one to use for the prune.

VARIETIES.—The most extensively grown variety is, of course, the French prune. There are some Robe de Sargents and they are heavy, consistent bearers of fruit which is uniformly larger than the French, but I do not think that it is the proper variety for the hot valleys, owing to the fact that the bark is so very easily burned by the sun, not only on the trunk, but on the limbs high up in the tree. I have never seen it tried, but I believe that the trees could be sprayed with a heavy whitewash and thus protect the tender bark from the sun; but I do not believe the difference in productiveness would pay for the trouble and expense.

CURING.—The method of handling the crop does not differ materially from that of other prune-growing sections, with the possible exception that we may hurry the harvest along a little faster to escape a possible damage from occasional early fall rains, as our fruit matures perhaps a week later than in the Santa Clara valley. In gathering the fruit, the orchard is gone over three times, the first time gathering only the fruit which has fallen to the ground naturally, the second time shaking the trees lightly so that only the very ripe fruit falls, the third time cleaning the tree of fruit. This practice, as opposed to the one of not gathering the fruit until it falls to the ground naturally, does not seem to affect the size of the fruit or the sugar content, as can be testified by the packers who buy the dried fruit in that section and by the growers themselves. It seldom takes more than two pounds of green fruit to make one of dried, and usually less. While of course the size of the fruit varies in the various orchards, on an average the great bulk of the crop will count less than 60 prunes to the pound.

BEARING.—Compared to many other fruits, the prune takes a long time to come into bearing, and a great many new and uninformed growers become very much discouraged before it is time for the returns to begin to come in. No one should plant a prune orchard and expect a profit from the trees before the eighth year. The amount of fruit harvested before that time will, with a few exceptions perhaps, fail to pay for the trees, planting, caring for the orchard, fighting insect pests and diseases, cultivating implements, dipping machine, boxes, trays, etc.

But if one has the patience and the capital to carry him through until that time, under ordinary conditions the orchard should begin to pay interest on a valuation of $1,000 per acre. Under proper care, the value of the orchard will increase for several years as the fruit-bearing surface increases. I have seen more than one orchard 18 to 20 years of age produce crops that paid 10% on a valuation of $4,000 or more per acre. This is not the average, however. Of course, the returns which one can expect depend not only upon his crop but the price he obtains for it, but as long as the price does not go below 2½ cents basis (and I do not believe that it ever will again), one can expect a good profit on an average crop. While a very large acreage has been planted to prunes in the last few years, I believe that the improved methods of marketing, increased facilities of transportation, cheaper freights, the widening of both foreign and domestic markets, will tend to keep the price of the fruit normal. So, in my opinion, the owner of a young orchard, or the prospective planter of one, can reasonably expect to obtain a profitable price for his fruit when the trees comes into full bearing.

DIFFICULTIES.—Now that I have paid the prune industry of the interior valleys all the compliments that I could and still remain on speaking terms with the truth, it is my duty to do a little knocking, and try to tell you of some of the more important difficulties and problems of the prune-grower.

As the pear thrips have not as yet invaded the greater part of the interior valleys, I consider the red spider the most important insect pest with which we have to contend. The hot dry climate of the valleys seems particularly favorable for this pest, and in years that the trees receive insufficient moisture, if the pest is present and nothing done to control it, the trees are almost defoliated. Crude-oil emulsion applied to the trees during fall of the year has proven effective in reducing the number of these mites by killing the eggs; and some form of sulphur in the early summer controls those species which pupate in the ground.

The next most important pest is the brown apricot scale, but this is fairly well controlled in some sections by the parasite Comys fusca. In some seasons the scale gets ahead of the parasite, and then a thorough application of crude-oil emulsion is resorted to. It is seldom that the prune aphis do any damages, as they seem to be very well controlled by their natural enemies.

The only plant disease with which we have to contend is crown gall, and as this was never very extensive, and is not growing any worse at least, it cannot be considered a drawback to the industry.

The proper method of pruning the prune has been discussed by so many able men that I do not feel competent to take issue with them, but I will say this much: the method used in the coast counties will not apply in the dry, hot interior valleys. A great deal of damage has been done to the old orchards by cutting the center limbs out, with the idea of admitting more air and light to the trees, but when the trees become heavily laden with fruit the limbs would bend down and outward, leaving the center of the tree exposed to the scorching rays of the July and August sun, with the result that they were badly burned on the inside, and large portions of the trees had to be cut away, leaving them misshapen and irregular in appearance. It took years to correct this, and now the growers leave more of the center limbs as a protection.

In conclusion, I will say that in spite of the difficulties to be overcome and the problems to be solved, the prune industry in the great interior valleys has come to stay, and I, with hundreds of other growers, am going to stay with it.

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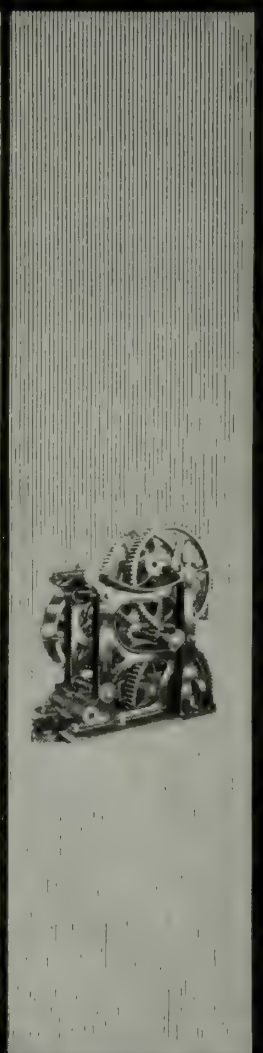

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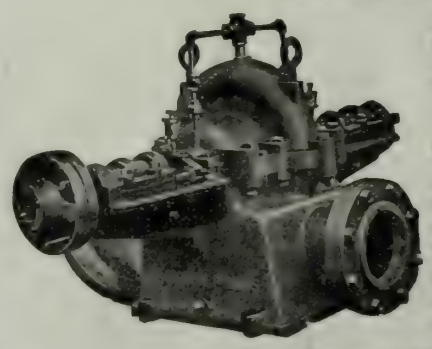

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FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

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For Rent—To experienced dairyman, fine farm on Feather river in Yuba county, California. 100 acres irrigated alfalfa, 20 acres unirrigated alfalfa, 100 acres grain, corn and bean land. Will rent alfalfa land alone if desired or will plant all to alfalfa. References required. Address "B," P. O. Box 427, Marysville, Cal.

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EIGHT-HOUR LAW AND ELDERLY WORKERS.

To the Editor: Noting your desire to play umpire in the Hillers case, I would say that perhaps he has a fairly productive farm, in good shape, and is satisfied to take life easier, and as he thinks it won't cost him anything, as the increased price of his produce will make up for any increase in wages he may have to meet, he thinks to pose as a benefactor of his hired men, whom he terms mules, though the chances are that he hires no men, but will just take the increase on the price of his produce that he looks for and that will be his reward. He likely can see that the number of small farms will remain about as they are, and the larger farmers will, with their tractors and improved implements, go ahead, and with few men get out what they can, paying what they have to for as short a time as possible, take their ease the balance of the year, and let their harvest help rustle the balance of the year.

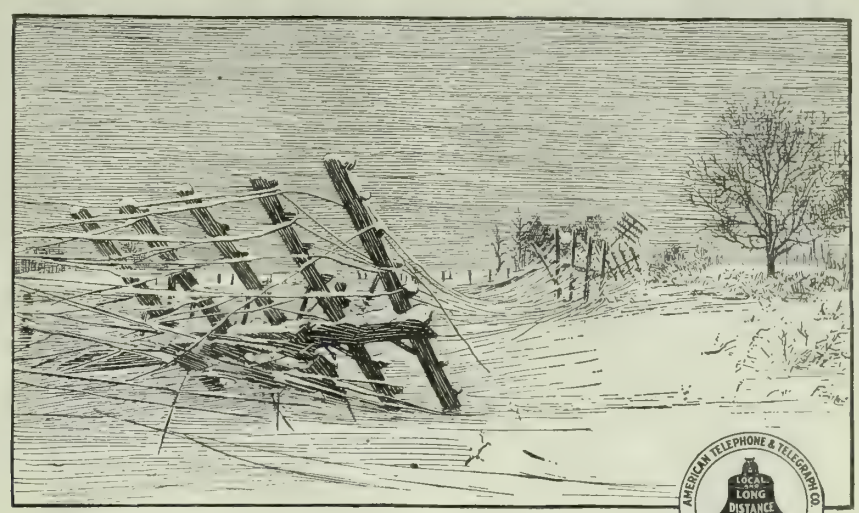
The big farmer will get on all right, but when it comes to making a small farm, one pair of hands does not go very far toward making even a small farm, and when it comes to paying for help at the rates now anticipated, he will simply have to wait and do the work as fast as he can, which may take years, and the prospect will deter men from taking it up at all. The small farmer is what the State requires, but under present conditions there is not a fraction of that kind of development going on that there should be. It is a well known fact that developing small farms to a paying status is a long, uphill job, with many misgivings as to future markets, etc., and it needs encouragement instead of raps.

This man may be like a man in Missouri, whom I once knew, who would sit on his plow and wish for Sunday to come, so he would not have to plow his own corn, and wants a little encouragement for short hours.

If eight hours and minimum wage prevails, what is to come of the man of family, aged 40, 45, 50, 55, 60, and up to 65, who while they may be in fairly good health, are past their best efficiency and are not able to move like a man of lesser years, but nevertheless could do a fair day's work if given time, and could earn enough to feed himself and wife, and possibly an invalid son or daughter, and not be dependent on their relatives if they have any, or, if not, go to the poorhouse. There is very much of discrimination against these people at the present by the large employers. They simply will not employ them, or anyone who cannot give a full measure of efficiency. Now, if the smaller employer is threatened with prosecution for giving that class employment who are unable to give the necessary efficiency for the wage and hours, what is to become of them?

The strong point against the short hours, is the competition in articles shipped in from States with lower wage and longer hours, and with produce shipped out, as well as foreign made goods, and raised produce, namely eggs and butter, nuts, etc. It would not make so much difference if it was confined to a few lines, but that law enacted, will affect every line of endeavor in this State as against outsiders. ORCHARDIST.

POLAND - CHINAS—Fifteen head 11 months gilts, open or bred, of prolific kind. Geo. V. Beckman, Lodi, Cal.



The Telephone Emergency

THE stoutest telephone line cannot stand against such a storm as that which swept the Middle Atlantic coast early in the year. Poles were broken off like wooden toothpicks, and wires were left useless in a tangled skein.

It cost the telephone company over a million dollars to repair that damage, an item to be remembered when we talk about how cheaply telephone service may be given.

More than half of the wire mileage of the Bell System is underground out of the way of storms. The expense of underground conduits and cables is warranted for the important trunk lines with numerous wires and for the lines in the congested districts which serve a large number of people.

But for the suburban and rural lines reaching a scattered population and doing a small business in a large area, it is impracticable to dig trenches, build conduits and lay cables in order that each individual wire may be underground.

More important is the problem of service. Overhead wires are necessary for talking a very long distance. It is impossible to talk more than a limited distance underground, although Bell engineers are making a world's record for underground communication.

Parallel to the underground there must also be overhead wires for the long haul, in order that the Bell System may give service universally between distant parts of the country.

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I deal direct with the consumer. If I had agents to sell my product it would mean that I must add to my price as much as the agent's commission would be. My lumber is brought direct from the forest. Latest improved machinery. Up-to-date methods. Redwood Tanks, Drying Trays, Picking Boxes, Peach Boxes, Egg Cases. A tank 5 ft. diameter, 2½ ft. deep, $7.50. A tank 6 ft. diameter, 2½ ft. deep, $10.50. Large stock of tanks of various sizes in stock. Anything made to order on short notice. Spraying tanks. Grape stakes.
R. F. WILSON, 447 W. Main St., Stockton, Cal.

A backwoodsman who had been elected to the Legislature went to the city postoffice to get some stamps. "What denomination?" inquired the clerk. "Lutheran," said the member, modestly.

Constructive Agriculture—No. 29.

ROTATING GRAIN AND SUGAR BEETS.

[Written for the PACIFIC RURAL PRESS by N. C. GIRDER.]

It has been demonstrated to the satisfaction of most farmers that the production of the same crop from the same field year after year results not only in a decrease in the yield, but also in a decrease in the quality of the crop produced.

As a result of his own investigations and records as engineer and agriculturist for two California sugar companies since 1903, the writer proposes to show the advantages of the sugar beet in your system of rotation.

It is a belief among a great many farmers that the growth of the sugar beet results in a permanent injury to the land. If any dependence can be placed in actual crop records nothing can be further from the truth.

One field, in Santa Barbara county, of over 200 acres was planted to beets for six consecutive years. During the first period of three years it produced an average of 10.65 tons of sugar beets per acre and during the second period produced and average of 9.81 tons. On the seventh year the field was sown to barley and produced a yield of 53 bags per acre. No accurate record could be obtained of the barley yield of this field previous to the time it was farmed to beets, but the estimates of the neighboring farmers placed it at from 15 to 25 bags per acre.

During the eighth, ninth and tenth years the field was subdivided, farmed to various crops, principally barley and beans, with excellent results. On the eleventh year the entire field was again planted to sugar beets and produced an average of 12.82 tons per acre.

Another field of 87 acres planted to to the sugar beet for 11 years gives the following record:

	Tons per acre.
1904	15.78
1905	12.52
1906	13.54
1907	9.48
1908	11.68
1909	12.25
1910	14.42
1911	12.89
1912	8.97
1913	7.33

The shortage of 1912 and 1913 can be attributed more to the drouth than to deterioration of the soil, as the 1914 crop promises to equal that of 1911. It is true that the average tonnage (11.17) for the second five year period does not equal that of the first period (12.6), but the maintenance of yield compares favorably with that of any other crop produced continuously on the same field for a period of 10 years.

A field of 300 acres in Yolo county, after being planted to sugar beets for two years produced 2.54 tons per acre of red oat hay. No previous record was obtainable of this particular field, but the average grain hay production in that section of the county is around 1.5 tons per acre.

Numerous other instances could be given, space permitting, which would lead to similar conclusions.

It has been proved in practice that the sugar beet is an excellent food for cattle, sheep, and hogs.

Thousands of cattle and sheep are fattened every year upon the tops, crowns and beets left in the fields of the sugar companies.

One of the principal dairymen of Yolo county plants a considerable acreage to sugar beets every year.

Under its present state of development the sugar beet has a nutritive ratio of 1.7 to 1.9 which balances well with the narrow ratio of alfalfa. It has a food value nearly double that of the mangel wurzel and one-seventh that of field corn, which gives it a value of $4 to $6 per ton.

The yield on good sugar beet soil should be 15 to 20 tons per acre. Instances are known where the yield has been 35 tons per acre.

The cost of production and harvesting to the farmer who would plant 5 to 10 acres should be $15 to $25 per acre, yielding a profit of $35 to $60.

To produce the sugar beet, it is necessary to have a deep, fertile sedimentary soil free from excessive alkali.

The growing of the sugar beet should be of especial advantage to the farmer who raises his produce for feeding rather than for the market.

[Mr. Girder does not mention the fertilizers which we presume were intelligently applied on these fields: his point is that sugar beets may be grown without "permanent injury to the land."—EDITOR.]

PLANT CACTUS DRY.

To the Editor: Just a few words in defense of Burbank's spineless cactus. As superintendent for a land company I planted several thousand slabs of the various varieties in 1912, 1913, and this year 1914.

While some people have made partial or complete failures with spineless cactus, it was due to planting slabs without curing, or planting in wet soil or irrigating before well rooted: either is fatal. Or again, some have expected results after planting on a hillside or among rocks without cultivation. It stands to reason any plant producing a hundred tons the first year per acre must have moisture, but moisture must not be given until well rooted. Enough moisture is in the slab when planted to send out roots. Slabs should be cut off and put in shade to heal several days or a week: then planted in slightly moist or even dry soil finely pulverized, and they will grow. With the less frost-resistant varieties, care must be taken that any decayed tips caused by frost be cut off on a sunny day and they will heal over. If not cut off, the decay will go down through the plant and kill it. After the big January freeze two years ago we did considerable pruning, but very little has been necessary since.

Last August I planted two varieties on my place, irrigated them in September, and twice this season; and I have an average of 80 slabs on each one planted in August. Slabs weigh nearly two pounds each.

Rows are 8 feet apart and plants 4 feet apart: 1350 plants per acre and 160 pounds each plant is 100 tons per acre the first year. We paid 40 cents to $1 per slab near by. I have 100,000 slabs per acre and am offered by a Santa Rosa nursery $150 per thousand. Others are getting as good a yield as myself. Even though they have no greater food value than pie-melon, the enormous yield makes them a very profitable crop. I will make more clear money selling slabs this and next month from less than one acre than from 20 acres alfalfa and corn.

J. A. POWELL.

So. Dos Palos.

No sitting up nights to keep this motor running

The cot was taken out of the pump house when the old power used was replaced by a

G-E ELECTRIC MOTOR For RANCH AND FARM

As long as power is supplied this motor runs without attention other than refilling its reservoirs every month. This motor is belted to a 6-inch vertical pump on the ranch of Mr. Edward Gilman, at Edenvale, Cal. This is Mr. Gilman's second purchase of a G-E motor. He will tell anyone what he told us:

GENERAL ELECTRIC CO.,
San Francisco, Cal.

Gentlemen:—

I have used a General Electric motor to irrigate my farm and orchard for the past two years and have not had one moment's trouble or any complaints. I have left it running for hours without even thinking of it. I have unlimited confidence in the motor and can highly recommend it.

Yours very truly, (signed) ED. GILMAN.

Write today for our interesting free booklet about ranching and farming with electricity.

General Electric Company

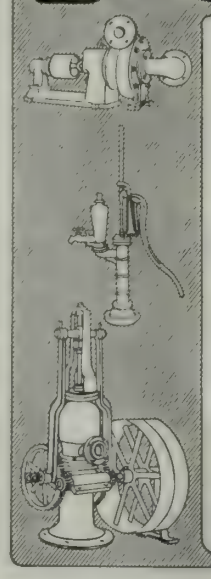
Los Angeles Office:
124 West 4th Street

San Francisco Office:
Rialto Building

The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

Address nearest office. 4958

PUMPS



Whatever kind of a pump you need—we have it. Handling all styles of pumps we are not obliged to urge any one type on you, but are in a position to help you select the pump best adapted to your particular requirements. We manufacture and sell

Horizontal Centrifugal Pumps
Vertical Centrifugal Pumps
Deep Well Pumps, Power Heads
Windmill Pumps, House Pumps

Illustrated are three of the many different styles. Don't decide on a pump till you put your needs up to our Pump Specialists. Their advice and suggestions will cost you nothing.
WRITE TO US and state your requirements—by guiding you to a right selection we can probably save you both money and trouble.
FREE CATALOG 28-B describes Bean Horizontal and Vertical Centrifugal Pumps.
FREE CATALOG 28-D describes all other pumps; also Bean Distillate Engines.
A postal will bring either or both by return mail.

BEAN SPRAY PUMP CO.
211 West Julian St. San Jose, Cal.

Country Vegetables.

THE BEAN OR PEA WEEVIL.

To the Editor: Can you tell me how to prevent my dry seed beans from getting full of bugs? I tried putting lime and sulphur on them before putting away, but it did no good. They look like a little bed bug; roundish and gray; but do not smell when mashed. They put round holes through the beans.—J. A., Lodi.

The answer is fully given on page 249 of our book: "One Thousand Questions in California Agriculture Answered" but as only a fraction of our readers have yet secured this book we repeat the answer as follows:

"You have to do with the bean weevil. The eggs are inserted by the insect while the beans are still green in the pods; subsequently the eggs hatch and the worm excavates the interior of the ripened beans. The beans can be protected after ripening by heating carefully to 130°F., which will destroy the egg, or the larva if already hatched. Of course, this heating must be done cautiously and with the aid of a good thermometer for fear of destroying the germinating power. The work of the insect can also be stopped by putting the beans in a barrel or other close receptacle, with a saucer containing about an ounce of carbon bi-sulfid to vaporize. Be careful not approach the vapor with a light. After treatment for one-half hour, the cover can be removed and the vapor will entirely dissipate. This is a safer treatment than the heating. Similar methods of control can be used on other pea and bean weevils.—EDITOR.]

SWEET POTATOES IN HEAVY SOIL.

To the Editor: Will you kindly inform me whether it is practicable to grow sweet potatoes under irrigation on heavy "dry-bog" clay soil containing considerable lime provided considerable organic matter were worked in?—D. S. K., Sanger.

[You might do well enough for home use with sweet potatoes on such soil after you had lightened it up enough as you propose, but such soil is not naturally adapted to make a handsome product economically, as is required in commercial production.—EDITOR.]

SUGGESTIONS FOR THE CORN WORM.

To the Editor: If B. E. S. of Ripon, has only a small patch of corn to protect, dusting the ears with cayene pepper will keep the worms away. I am going to experiment with an emulsion of whale oil soap and coal tar dissolved in coal oil, and spray my corn with it. Most insect life has an aversion to coal tar. I kept cutworms from my early cauliflower plants by spraying with tar water, which leads me to think that the coal tar emulsion might answer for corn worms.

A mixture of linseed oil and coal tar applied to the perches on which fowls roost will effectually prevent mites from troubling the fowls at night, or crude coal oil is equally as good.

SAMUEL HAIGH.

San Jose.

CLEANING LARGE CANALS.

To the Editor: Having in mind the removal of sand from irrigating ditches, say 40 to 60 ft. wide, I have thought of a tractor so equipped as to be stationed on the ditch bank say every 20 or 30 ft. with a swinging crane reaching down and into ditch, this crane being equipped with an endless chain and buckets and so arranged as to drop sand at the rear of tractor. Or is it possible that in removing loose sand a suction arrangement could be used? A. H. GABEREL.

Hughson.

[This proposition is referred to engineering readers.—EDITOR.]

THE PURPOSE OF GREEN MANURING.

Dr. Charles B. Lipman writes in Circular 110 of the California Experiment Station as follows:

"By green manuring is meant the incorporation, through plowing or similar operations, of green organic matter into the soil. The purpose of it is to maintain or increase the organic matter supply of the soil, which, for reasons below given, constitutes one of the most important factors in soil fertility.

Any green crop which yields a large tonnage of material in a short time may be used to add organic matter to the soil. There are some plants, however, which possess not merely the power of yielding large amounts of organic matter, but also the power of gathering from the air most valuable, commercially, of the elements of plant food—nitrogen. These plants—the legumes—other conditions being equal, are therefore to be preferred for green manuring purposes to the non-legumes. They are plants which belong to the well known family of which peas, beans, vetches, alfalfa, the clovers, lupins, and many others are members.

Nothing more emphatic can be stated in support of green manuring under the proper conditions than a description of the role played by organic matter in soils.

1. By its binding action on the soil particles and by its sponge-like absorptive power, organic matter makes sandy soils more retentive of moisture. (Improves water holding powre.)

2. By its light yet bulky mass it prevents the extremely fine particles of clay soils from running together and becoming cemented. (Improves essential feature of aeration in heavy soils.)

3. Organic matter contains most of the nitrogen found in soils, and all plants except the legumes are absolutely dependent on it for their supply of that essential element.

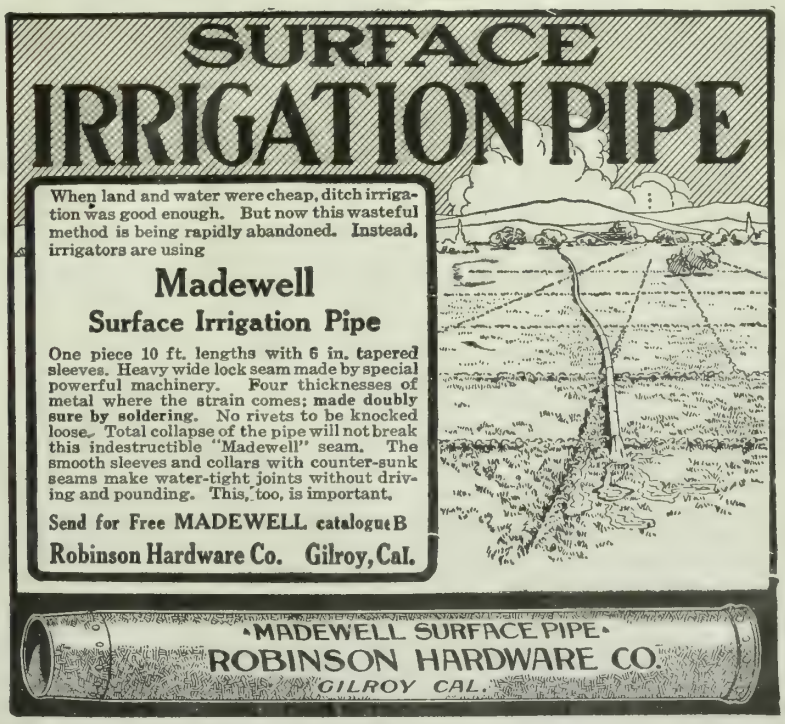
4. Organic matter is the source of energy and the laboratory in which the important beneficial soil bacteria manufacture available plant food and bring about other changes of importance to plants.

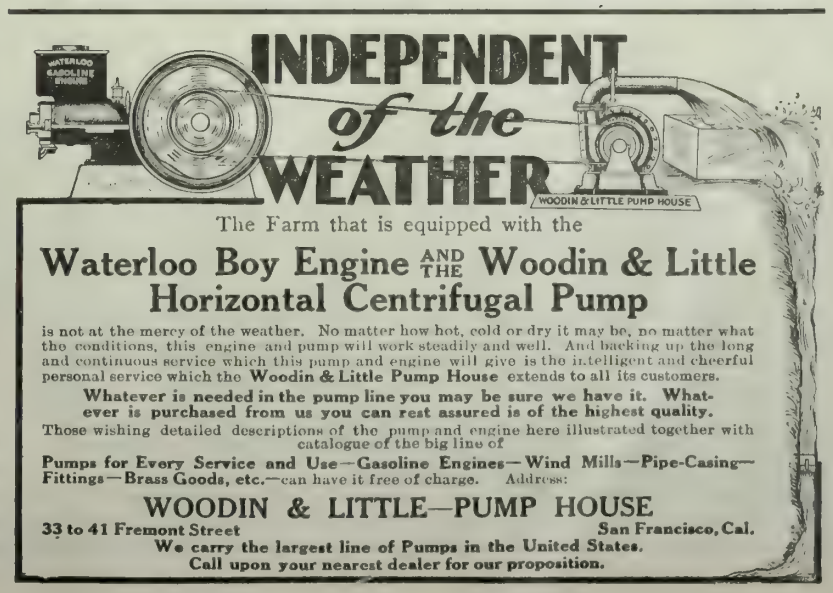
5. Through its decomposition by soil micro-organisms, organic matter acts as a source of carbonic acid and other weak acids which help to dissolve and make available the mineral matter necessary to the growth of plants.

Where water is scarce a cover crop is worse than useless because it robs the trees or succeeding crop of moisture and when the cover crop is turned under the soil will be too dry to decay it. Therefore, the organic matter will not only give no good effects, but by its bulky nature will leave the soil loose and porous and thus help it to dry and lose moisture all the quicker.

In irrigated orchards the cover crop may be sown in August or late in July. About 20 pounds per acre, less, of the seed is needed in orchards than on dry farmed land, since there must be considerable waste space between the trees owing to heavy shade in which the green manure crop will not grow."

Quidnunc: "What makes your hair so much grayer than your whiskers?" Bulfinch: "Why, my hair is a great deal older than my whiskers."—Woman's Journal.





AGRICULTURAL REVIEW.

Deciduous Fruits.

The California Cured Fruit Exchange elected as its manager, Henry M. Ellis, formerly of the Pioneer Fruit Co. The Exchange expects to handle 50% more fruit this year than last.

Vacaville shipped 475 carloads of fruit before July 16, a gain of 31 cars over the same season last year.

Apricots shipped this year by the California Fruit Distributors totaled 382 cars, about 100 more than ever before. Their total shipments to last Saturday were 3397 cars or 745 more than to the same date in 1913.

Napa county shipped a straight car of Alexander apples to Pittsburg last week and another to New Orleans this week.

Money was recently raised in Watsonville and a meeting of all orchardists called to meet State Horticultural Commissioner Cook and discuss means of preventing importation of the worm-infested C grade apples from Oregon. Dr. Cook recommended that all shipment of wormy apples in whatever direction should cease and that he hopes the crusade will become statewide so as to be effective.

A strong movement was recently inaugurated with C. E. Virden, of the California Fruit Distributors, at its head, to ask the legislature to pass laws standardizing fruit packs for shipment East. Such standardization will probably follow the lines which have for years governed shipments from Placer and Eldorado counties.

The Jackson orchard of Sutter county produced about 100 tons of pears which sold at $45 per ton.

Several cars of Bartletts will be shipped from San Luis Obispo county.

Over a dozen carloads of apricots shipped daily from Mountain View to the canneries and still more being dried indicates a pretty good crop, after all.

Santa Clara valley is having an epidemic of cracking prunes, many of which are molding. It is estimated that at least 1% of the crop will be lost, especially since packers contracted at such high prices this spring that they will accept only the best.

Various systems of apricot pruning will be tried out on a Winters orchard by G. H. Hecke, county horticultural commissioner, and G. P. Weldon, deputy state horticultural commissioner. Pruning methods of that section are distinctly different from those around Vacaville, which again are different from those around Suisun.

Land Deals.

Japanese from California are buying Nevada land to be irrigated by pumping.

A colony of German-Americans is to settle near Oasis, Nevada, and irrigate by motor-driven pumps.

Canneries.

Loss of peaches and vegetables near Chico gives impetus to plans for one of the biggest canneries in Butte county.

Rancho Bonito of Butte county expects to ship about 700 tons of canning fruit.

The cannery at Yuba City took on all the help it could get last week. It is to run until October.

The Tulare Canning Co. started a 25,000-can run last week.

The Sunlit Cannery of Atwater, employing 150 to 200 people, began operations last week. When Tuscans are gone in October sweet potatoes will be canned till November.

The Porterville cannery uses about 450 people, but finds it hard to get them. The heavy Tuscan crop is going to crowd them.

Berries.

The boys of the camp on the Barlow ranch at Sebastopol finished picking Mammoth blackberries recently and at once tackled the Lawtons. There are about 145 boys in camp and they hope to earn about $5000 this season.

Grapes.

About a carload a day of Thompson Seedless were shipped from San Joaquin valley last week, and the Malagas started this week. Through efforts of the California Green Fruit Association, systematized distribution to the various markets will be accomplished this year, and a standard of 17% sugar has been agreed to by practically all of the shippers. Association inspectors turned down some shipments last week as being too green. So many others had to be picked over that cutting came to a standstill.

The Jack London Grape Juice Co., recently incorporated for $250,000, will use some of the author's Sonoma county vineyard products.

Japanese grape pickers for the raisin crop promise to be plenty.

Citrus.

Orange picking in the Porterville district is to be done by association crews paid by the day. This is a long step toward a uniform standardized pack and will soon make fruit from this district a favorite on the market because its condition when packed will not be so variable.

Among preparations of the California Fruit Growers' Exchange for the marketing of the crop from thousands of acres of oranges recently planted is a grand advertising campaign designed to induce more retailers to handle oranges and more consumers to eat them. Part of this advertising is done directly by the Exchange in newspapers and weekly magazines. Part of this business is handled by an Eastern agency which sent two men to southern California recently to get first-hand knowledge of the thing they are advertising.

R. J. Grassly, of Chicago, advertising manager for the Exchange, came back with G. Harold Powell, who went East directly from the State Fruit Growers' Convention to form advertising plans and to keep in touch with the Eastern citrus situation.

A recent Consular Trade Report from eastern Sicily is quoted below: "The lemon season in this territory may be said to run from October to May. * * * An abundant crop in Sicily (last season), a diminished yield in the United States, and a reduced tariff in the last quarter of 1913, aided to make 1913 a banner year in the exports of this product to the United States. The total shipments of lemons to the United States during 1913, as invoiced at the Catania consulate, were 476,712 boxes * * * compared with 117,320 boxes * * * for 1912."

Several cargoes of Palermo lemons from northern Sicily seen on the Eastern markets in June indicated that either the season was about over or the Sicilian lemons were very inferior to those from California. Fruit dealers said they preferred the Western fruit every time, but could not get it.

Mislabeled oranges have been found on Eastern markets by the U. S. Department of Agriculture, and the Food and Drug Act may be invoked against the growers or shippers. Every box shipped by the Exchange is labeled and every orange is wrapped in an Association labeled wrapper.

Fumigation for extermination of gray scale at a cost of about 35 cents per tree will be carried on by blocks

In order that you may be sure to get Select Stock of just the Varieties you want for the coming season's planting, book your order NOW with one of the

LEADING CALIFORNIA NURSERIES

WALNUTS

GRAFTED AND TOP-BUDDED. A LEADING SPECIALTY.

We are the only nursery that has made a success of top-budding the walnut, and invite investigation. There is no finer stock in the State, and all of our stock is propagated from known bearing trees. Careful planter will take heed to this. Please write or call.

Pedigreed French Prunes

Blenheim Apricots. Ornamental Stock in Pots. Landscape Gardening a Specialty.

LEONARD COATES NURSERY CO., Morganhill, Cal.

KIRKMAN'S RELIABLE TREES

Trees that grow and bear true to name. Now booking orders for next season. Write us now about what you will want.

KIRKMAN NURSERIES
2525 Tulare St., Fresno, Cal.

TREES OF SUPERIOR QUALITY

We are now booking orders for French, Imperial, and Sugar Prunes on the **Myrobolan root.** Also Tuscan and Philips Clings, Muirs and Elberta Peaches, Plums, Cherries, Almonds, Olives, Walnuts, Pears, Apples, of the leading and best varieties.

Stock first class and guaranteed true to name.

Write us now for prices.

BENNETT H. MADISON, Princeton, Cal.

Maxwell's Nurseries, Napa, Cal.

Now booking orders for all varieties of nursery stock for next season's delivery.

French, Imperial, Sugar and Standard prunes on all roots. Apricots, Bartlett Pear, Cherry, Peach, Apple, etc.

FIRST CLASS STOCK TRUE TO NAME.

TREES

French and Imperial Prunes, Bartletts and other Pears; Tuscan and Phillips Clings, Fay Elbertas and other Peaches. Cherries, Plums, Apples, Grafted Walnuts, etc. Stock pure and of best strain. Place orders promptly. Prices reasonable.

TABLE GROVE NURSERIES
Healdsburg, Cal.

If you want the best

TREES

Write for Price List.

UNITED FRUIT CO.
Newcastle, Cal.

Stuart Prolific Almond Buds

FOR SALE

Can furnish any quantity from now on.

$5 a thousand in large lots.

RIPON NURSERY & IMPROVEMENT CO., Ripon, Cal.

EUCALYPTUS SEEDS

In large or small quantities, 40 species to select from. Write for my free pamphlet, "EUCALYPTUS CULTURE." Trial packets, 15c each, 4 for 50c.

THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.

through Tulare county, beginning in the Lindsay and Porterville districts. Five county outfits will be used in addition to many private outfits.

The Bloomington Protective Association of Riverside county recently organized to fight scale on their lemon trees. It is to be incorporated for $15,000 in $3 shares to cover the land of the irrigation district. At the organization meeting 250 acres were signed up.

Olives and Walnuts.

Olives in the Seville district of Spain promise excellent yield. There is still a large supply of last year's oil on hand.

A ranch of 1000 acres in Yuba county was recently bought to set to olives.

The California Walnut Growers' Association looks for higher prices than last year, larger nuts of better quality and more of them. Couldn't be much more optimistic.

A ranch of 200 acres in Stanislaus county was recently purchased to set to walnuts.

Transportation.

The new 140-hour Western Pacific fruit train to Chicago, mentioned last week in these columns, beat its schedule by nearly 8 hours, and the next one came in 6 hours ahead of time. As mentioned in another place, the problem of California fruit shippers is to get such transportation improvements as will enable them to pick their fruit with a maximum of ripeness to avoid the woody tastelessness with which much of it greets the Eastern palate.

A Western Pacific-Santa Fe traffic agreement has been effected whereby these roads help each other in competition with the Southern Pacific, whose lines they practically parallel via W. P. from Salt Lake to San Francisco and via Santa Fe from San Francisco through Arizona. The Santa Fe is to use W. P. tracks from Stockton to Sacramento, where the Santa Fe has never been before, and the W. P. will get added tonnage which it greatly needs.

A Santa Fe train of 24 cars of green fruit left Tulare county for Chicago last week, one of the first to go by that route.

Grain and Hay.

San Quentin jute grain bags may now be had in any quantity at 8½ cents.

With corn selling in Kansas at more per bushel than wheat, much wheat will be consumed as stock feed. The general shortage of corn and the ordinary wheat crops of the rest of the world seem to indicate that the estimated greatest wheat crop the United States ever raised will not cause lower prices.

A San Joaquin county rancher claims 80 sacks of barley per acre from 14 acres.

Barley cargoes of 8000 to 13,000 sacks each are coming down the Sacramento.

Riverside county grain farmers are planning to store their crops on account of the low prices they expect to follow the over-abundant harvest.

A grain fire in Colusa county recently burned over 400 acres of standing grain, 500 acres of stubble, and a house. Another fire in Sutter county burned 160 acres of grain. This suggests the letter written to us last April by K. B. Norswing, a member of the Orange County Farmers' Mutual Fire Insurance Co. He mentions their rates on dwellings as 20 cents per $100 for five years, plus whatever assessments may be necessary. Since there have been no assessments in the two years he has been a member, they are infrequent. The company is incorporated not for profit. The secretary's report for 1913 shows a net increase of $812,215 in insurance written that year, totaling over $5,000,000 in force December 31, 1913.

By-Products Convention.

The Seventh National Apple Show appointed a committee on by-products, which has called a meeting for September 10 at Portland for all interested in the manufacture of fruit by-products.

Rice Show.

An exposition of all the steps in raising, marketing and preparing rice to eat will be given under the name of the Biggs Rice and Land Show at Biggs, September 25 and 26. This section is the pioneer in commercial rice growing in California, but the swamp lands of Glenn county have shown their fitness in the past season so that the acreage there is to be extended next year. A carload of rice-binders was recently received at Biggs.

Vegetables.

San Joaquin county has been shipping onions to New York, a very unusual condition. There are only about 4500 acres of onions on the Delta.

A profitless and ardor-dampening mass-meeting was recently held at Oxnard under the auspices of the Lima Bean Growers' Association. Its members pool their crops and the pools have been growing smaller. This feature of the organization seems to cause the lack of interest.

A once vacant city block in Tulare is producing a fine crop of melons, due to the efforts of J. A. Edwards and his grandsons. Isn't that a splendid way to make a "city beautiful."

Merced county shipped 2¼ tons of sweet potatoes last week to the Northwest.

There are over 36,000 acres of potatoes in the Sacramento Delta.

Irrigation.

Work on the seven-mile cut through Knight's Landing ridge to drain 73,000 acres of land at a cost of $800,000 was recently commenced.

The Anderson-Cottonwood irrigation district of 30,000 acres in Shasta county was almost unanimously approved last week. The estimated cost is $12 per acre.

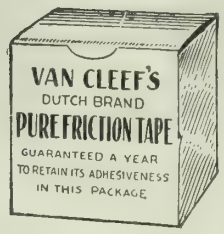
Irrigation District No. 1, of 28,000 acres in the U. S. Truckee-Carson project obtained permission recently to organize. The U. S. Reclamation Service will advance about $1,000,000.

Protective League Active.

Secretary Dunn, of the Farmers Protective League, announces that organizations have been effected in twenty counties to defeat the universal eight-hour law; and the local organizations have aggregate memberships of many thousands. In the country districts the educational campaign is well under way.

"It is necessary to arrange for the commencement of the campaign in the large centers," said Dunn. "We find that the total registration in three counties—Los Angeles, San Francisco, and Alameda—is within 2500 votes of a clear majority of the entire vote in the State. It is the city dweller we must convince, and hence our efforts will be centered around the more populous districts."

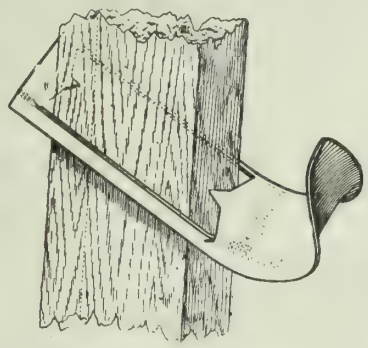
Grafting Tape



Leading California Fruit Tree Grafting Experts pronounce **VAN CLEFF'S DUTCH BRAND FRICTION TAPE** the best article yet produced for the purpose. If you will send us this advertisement, we will mail you, post-paid, a sample roll of tape for trial.

The Wm. H. Hoegee Co., Inc.

138-42 SOUTH MAIN ST., LOS ANGELES.



THE McINTYRE TREE PROP BRACKETS

ARE THE BEST MADE

Have a smooth rounded surface for the limb to rest upon. STRONG, WELL MADE, WILL LAST FOR YEARS. Will not CHAFE THE TREE like the wire brackets.

Sample and prices sent upon request.

Manufactured by the

PARKER MACHINE WORKS

Riverside, California.

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in each four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500%. At Maryland Ex. Station $1.96½ gave $22.11—over 1000%. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

UNITED STATES PHOSPHATE CO., Salt Lake City, Utah.

Write for literature.

"Perfection of fineness in grinding," our motto.

A CONSTANT UNVARYING WATER LOAD REQUIRES LESS POWER—ELIMINATES TROUBLE

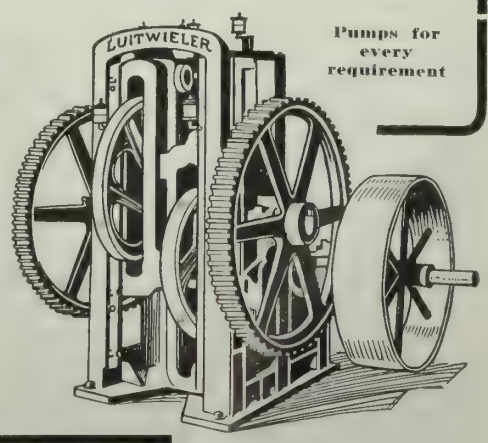
The **Luitwieler Pump** is perfectly constructed. No jerk, jar, vibration, etc., which are the main causes of shock and breakage.

The Luitwieler Pump
(Non-pulsating)

delivers a steady, even stream of water, resulting in maximum power economy and elimination of trouble. No dead centers. Perfectly balanced. No pit. Absolutely guaranteed.

Write for Catalog No. 11.

LUITWIELER PUMPING ENGINE COMPANY,
707-713 N. Main Street,
Los Angeles, Cal.



Pumps for every requirement

Commercial Rice in California.

[Notes from address delivered by E. L. Adams before the recent State Fruit Growers' Convention.]

Rice culture is one of the newly added industries in the State. In its introduction, California has added to its list a crop which furnishes the principal food for more than one-half of the world's population. Rice has no superior as a carbohydrate food, and is easily digested when properly prepared. It forms a well balanced ration when combined with meat or beans.

Rice has been grown in the United States since 1694, when it was introduced from Madagascar by an English sea captain. Rice-growing prior to 1890 was largely restricted to the Carolinas. Until this date rainfall was the only means of irrigation, but it was soon learned that rainfall could not be depended upon, so the building of irrigation canals soon followed. Upon the development of irrigation canals, the center of the rice industry moved westward from the Atlantic Coast to the prairies of Louisiana and Texas. The rice acreage in the United States in 1913 was 830,000, the leading States being: Texas, 400,000 acres; Louisiana, 300,000 acres; and Arkansas, 100,000 acres.

Rice culture has attracted a great deal of attention throughout California during the past two years. Several attempts were made a number of years ago, but the results did not prove entirely satisfactory. In the spring of 1909 the United States Department of Agriculture inaugurated tests on black adobe soil near Biggs to determine the adaptability of rice to the climate and soil of the Sacramento valley. The results from 300 varieties during that season indicated the possibility of rice culture in the Sacramento valley. Experimental tests were continued by the Department during 1910, 1911, and 1912, on several types of soil at various points in the Sacramento valley. In 1912, a station was established at Biggs, where experiments and studies in rice culture are now being conducted.

Rice has been grown commercially in California since 1912, when there were 1000 acres seeded which yielded approximately 30,000 sacks of about 100 pounds each, and sold for $2 per sack. The following year approximately 6000 acres, most of which was in the Sacramento valley, yielded 2000 to 5500 pounds per acre, averaging about 3000 pounds. Rice of good quality not damaged by rains sold readily for 2 cents per pound in the rough. Because much of the rice acreage was seeded and watered late that spring, and because farm equipment, principally threshing machines, were scarce, about one-third of the rice acreage was not threshed when the fall rains started on November 1. Very little threshing was done until spring on account of the continuous rainy weather. It was necessary for the farmers to leave their rice standing in the shock until spring before threshing. The acreage planted to rice in the State this season totals about 15,000, the largest plantings being at Biggs, Richvale, Gridley, Colusa, and Marysville, all of which are in the Sacramento valley. Rice is being grown this season in 15 counties in the State, located in the following valleys: Sacramento, 7; San Joaquin, 7; Imperial, 1.

The two principal types of rices grown in the United States are: Honduras, a long-grain rice, and Japanese, a short-grained rice. Of the two types, the Japanese has proven better adapted to California conditions, because it matures ten days to two weeks earlier than the Honduras. There are a great many varieties of Japanese rice, but the Wataribune and Shinriki have proved two of the best for California. The Wataribune is the principal commercial variety in the State.

Requirements for Rice Culture.—The principal requirement for rice culture is an abundant and always available supply of water. The successful cultivation of this crop is so dependent upon water that it should never be planted when there is any doubt about the water supply. It is necessary to submerge the fields from the middle of June to the latter part of September, three to five inches deep. Five to seven acre feet of water are required to produce a rice crop under California conditions.

Soil.—Rice prefers a rich clay soil with an impervious subsoil which will permit a continuous submergence of the land for about 100 days during the summer. Various types of land are all right provided the irrigation and drainage can be properly handled. Clay soil which is of a more compact nature than loam or sandy soil, is better adapted to rice culture for this reason. Rice can be successfully grown on clay soils of a great depth, but more water will be required to produce the crop than when grown on shallower soils. In California, it has been confined largely to the black adobe land which possesses the mechanical characters for retaining the water, the depth of the soil varying from two to eight feet. The land should lie in level tracts, the leveler the land the less checking will be required. The fields are leveed, and cross leveed, usually on contour lines. There should not be a variation of more than three to four inches in the levels of the land within each check. The checks vary from two to twelve acres, averaging about five acres.

Drainage.—Good drainage must be provided for successful rice culture to permit better cultivation of the land, earlier planting, better germination, a lower water table, prompt removal of the water from the fields previous to harvesting, and aeration of the soil. Good drainage cannot be emphasized too strongly.

Planting.—The planting of rice differs but little from planting of wheat or barley. The land should be well prepared. It is drilled or broadcasted at the rate of 80 to 100 pounds per acre. Rice requires a longer period to mature in California than in the southern States. Seeding should be done late enough to escape heavy frost and cold spring weather, but early enough to mature before the autumnal rains. Late seeding and watering has been, and probably will continue to be, one of the principal causes for the loss of a crop. When seeded in April and properly handled it will ordinarily mature October 1 to 10.

Watering.—As soon as the rice is seeded, germination should be started. If there is not enough moisture in the ground to start germination and no spring rains are received, flooding is necessary. After flooding, it is very essential to drain the checks rapidly. Frequent irrigations are necessary in order to keep the land moist. After the plants have tillered well, the land is continuously submerged until the rice begins to ripen. It is then harvested, and threshed with an ordinary grain thrasher after being well cured in the shock.

Cost of Production.—As compared with other cereals, rice is an expensive crop to produce. Under our present conditions of farm management in California, the cost of growing rice varies from $25 to $40 per acre, averaging from $30 to $35 which includes the total cost of growing and the water rental, but not the rental or interest on the investment of the land.

Profits.—With good farm management and when the irrigation and drainage water can be satisfactorily controlled, rice is a reasonably certain, and a profitable crop when fair prices prevail. Rice is valued not so much for the yield, but for the quality of grain produced. The quality of rice is based on the yields in pounds of head rice, or whole grains, which it will produce when milled. The profits will be governed to a considerable extent by the price received for the paddy or rough rice. The average market price of rough rice in the United States for the past 10 years had been $1.85 per hundred pounds. It is probable that the recent reduction in the tariff on edible rice from two cents to one per pound, may be to some extent affect the profits in rice culture. From the present indications, rice promises to be a profitable crop for certain sections of the State.

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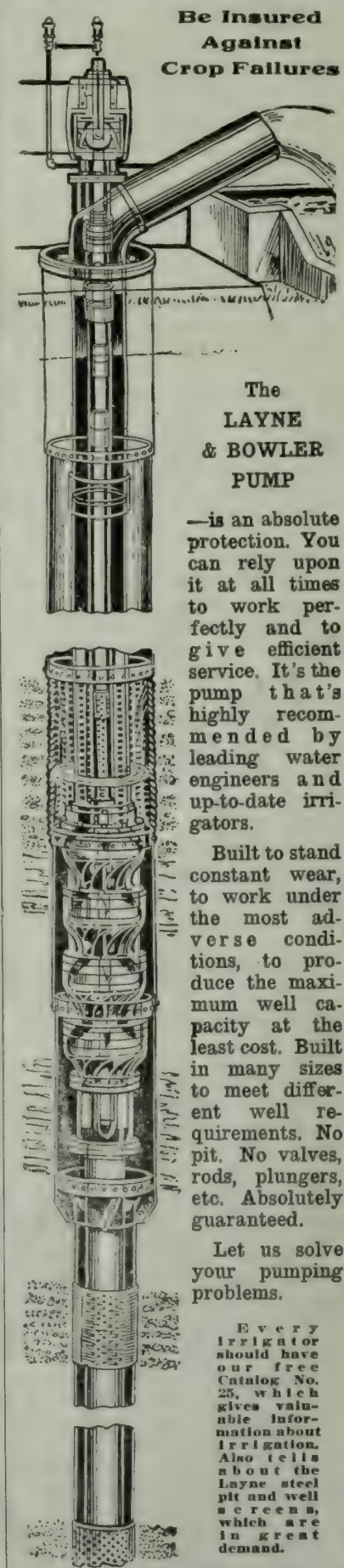

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Need 8-Hour Cows.

To the Editor: Permit me to take a try at the fly batted by Mr. Hillers in your issue of July 11th.

I greatly admire the kindly spirit shining through the article but cannot help wondering what has become of the author's insight. Why cannot he see that instead of helping the laborer the proposed eight hour law would work vast injury to our white workers?

In the fruit industry it would inevitably result in leasing great acreages of orchard to Japanese who, with the leasing companies already organized, could take these orchards over and work as many hours as they pleased since they would not be hired men. Very few orchard owners will attempt more than once to harvest a crop with hired help limited to the minute to an hour day. Not while Japanese companies are eager to pay alluring cash rental for bearing orchards. This, it seems to me, is what any level headed orchardist must see must come. And to one who wants to see this beloved State of ours kept as the heritage of the white man, the prospect is a mighty sad thing to contemplate. I cannot believe there are enough short-sighted voters in California to ever allow it to come to pass.

And I wonder if Mr. Hillers runs a commercial dairy! Mind I say commercial! This is to distinguish it from a play thing,—a dairy that will enable the owner to reap a decent profit from his investment and hard work. If he does we should like very much to know how he proposes to continue to run it and live with an eight-hour-six-day-law in operation. We haven't met the genius who can figure out a schedule that will work and leave a cent in the business. As one of my own dairy boys said the other day, "They may be able to work it out when God changes the nature of a cow and the possibility of accident is removed from the world." To say nothing of the added help that would be required, you let Tom milk a cow one day, and Dick the next while Tom rests, and Harry the next while Dick rests; Madam Cow will shrink her milk to the point where she will return little or no profit. When her profit is gone, the dairy is gone and with it the jobs of Tom, Dick and Harry. The only sane suggestion along this line I have heard is that we will all have to come to the mechanical milker. When we do at least half—possibly two-thirds of the men now employed in dairies will get plenty of rest. They may rest all the time. As yet, however, there is no law compelling the dairyman to pay them a minimum wage for doing it.

The man who is deeply interested in the well-being of the white men who work on our farms, and who has any vision of the difficulties that must inevitably face him when the hordes begin pouring through the Canal, ought to think many times before he votes to tie another stone about his neck by forcing on the farm employer an eight-hour law that will so cripple him that, to save his own family, he will be forced to adopt measures that, while abhorrent, will be necessary.

Elk Grove. RALPH NEWMAN.

HOW TO BURN DEAD ANIMALS.

[Written for the PACIFIC RURAL PRESS by WM. D. GUTHRIE.]

Those who have occasion to burn dead animals will undoubtely be interested in hearing how they do it in Owens Valley.

Over there the law says that every animal dies or is killed must not be buried or left to decay. As wood is rather scarce it was up to the stock men to find something else for fuel.

Some one tried throwing a couple of loads of manure on the carcass and setting it afire. Except the part that lay next to the ground, all was burned. To get around this, two old posts are laid about a foot apart, manure piled between, and the carcass is rolled on top. It is then covered with about 1 foot of manure. A little coal oil is now thrown on and set on fire.

Manure burns slowly, but makes a very hot fire. The result is at the end of four or five days the carcass is completely consumed. Moist fine manure seems to be best, although some use fresh stable manure with good results.

MODESTO TO ENTERTAIN.

Preparations are being made by the Modesto members of the California Creamery Operators' Association to make this year's meetings of the dairymen's and creamerymen's annual conventions the most interesting yet held by those associations. Plans are now being put on foot by C. A. Starkweather, State Dairy Inspector, along with the co-operation of other members in the vicinity of Modesto, to fulfil their promise made the two associations at their last year's conventions at Tulare, that the members at Modesto would hold a dairy show for the purpose of showing visiting members the kind of cattle that Stanislaus county now maintains.

The Modesto Chamber of Commerce also recently received a communication from James McAllister, secretary of the California Holstein Breeders' Association, stating that that association wished to hold their annual meeting at Modesto during the week of the above-mentioned conventions and also states that in all probability there will be a consignment sale of registered Holsteins at that time.

Mr. Carver, of Los Angeles, writes that it seems advisable to change the date from November to some time in October, in order that the meeting will not come at the same time as the National Dairy Show at Chicago.

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SALE OF SHORT-HORN CATTLE AND PERCHERON HORSES.

[Written for the PACIFIC RURAL PRESS.]

It has been several years since Short-horn fanciers have had an opportunity of purchasing purebred stock at public auction in this State, and the announcement made by William Bond of Newark, Alameda county, to hold a dispersal sale of his Short-horn cattle and Percheron horses will therefore create some stir in beef and horse circles.

Mr. Bond has been a breeder of purebred stock for a good many years, having during that time spent considerable time and money in breeding up both cattle and horses, but now finds that his 100-acre ranch, all of which is pasture land, insufficient for so much stock, and instead of offering a draft has concluded to dispose of all the stock.

The horses, of which there are a large number of brood mares with suckling colts at their side, should find a more ready sale this year than for several years past, as they are of the kind from which heavy draft colts may be expected, and in a year like the present one, when feed of all kinds is abundant and cheap, farmers devote more attention to horse raising. Two of the stallions being offered have just finished a busy season, and these, with several head of young fellows, will make an excellent selection of sires possible.

The foundation cows for the Short-horn herd were purchased from such well known herds as those of J. H. Glide, Rush & Pierce, and J. A. Brewer, and as many of the cows carried blood of the Robert Ashburner strain of milking Short-horns, it is natural that much of the stock now on the ranch meet with the approval of dual purpose advocates, for while Mr. Bond has not endeavored to develop that phase of the breeding, the type and udder development of many of the cows indicates unmistakable dairy qualifications.

Many of the females in the herd were sired by the bull King Edward, for several years herd sire of the Glide herd. Breeders of Short-horns do not need any introduction to the quality of this bull, as he has a name in California's Short-horn history that is hard to equal.

As a herd sire for these matrons, Mr. Bond has used the bull Perfection 353208, sired by the Glide bull, Knight's Perfection, and out of the cow Greenwood Mary, both of which were grand individuals.

This bull, Perfection, has nicked exceptionally well with the King Edward cows, as is shown by the many fine young things now on the ranch, and while most of the young stock seen in the herd were suckling calves, they give every promise of greatly aiding the welfare of the Short-horn breed in this State.

Mr. Bond informed us that most of the cows would be sold separately from their calves, although many of them have suckling calves at their side and most of them are bred at this time.

It is needless to say that young breeders wishing to enlarge their herd will find this a fine opportuniay of doing so, and with the scarcity of such stock in the State today there is little doubt but that the sale will prove successful.

PACIFIC IRRIGATION NOTES.

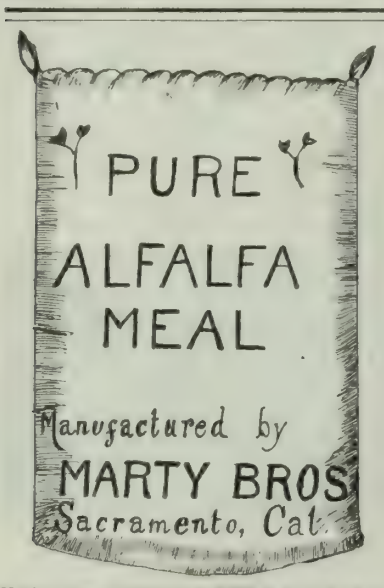
[Extracts from paper of Prof. C. I. LEWIS, Corvallis, Oregon, at Fruit Growers' Convention.]

DRAINAGE AND IRRIGATION.—Hand in hand with our irrigation problems, of course, we have the drainge problems. In some cases these are purely local, but in most cases they seem to be big community problems, and we are just beginning to realize that where we have spent millions in storing water in reservoirs and conducting it to fertile valleys, we are now confronted with the expenditure of additional millions to take care of seepage and drainage waters. The presence of such seepage waters has also brought before us certain problems as regards fruit production which we did not otherwise have, and there are certain physiological troubles attacking trees which in many cases I believe can be attributed to poor drainage in connection with irrigation.

COVER AND SHADE CROPS.—The use of cover crops is coming in more and more all over the Pacific Northwest, and I feel it is true over the entire Pacific Coast. We realize we have carried tillage to extremes, and while it brought us splendid results, nevertheless it has its drawbacks, and the growing of cover crops is one way to overcome the drawbacks of tillage. Cover crops and tillage together in many places will be the rule. Irrigation is a great aid to the successful growing of cover crops. However, in the Pacific Northwest we can see a trend in an entirely different direction. I look for the days of the clean tillage orchard to be numbered. More and more our orchardists are coming to see that the growing of shade crops is very desirable. Irrigation is revolutionizing an orchard practice, and in place of the clean tillage we are going to see fields of clover, alfalfa, and other leguminous crops growing among our trees.

SOIL FERTILITY.—The proper handling of irrigation water and the use of such cover crops and shade crops is going to allow us to avoid certain extremes of heat and moisture in the soil, and by controlling these extremes I believe we are going to produce such conditions that the tree will naturally keep in a healthier condition than otherwise.

The question of soil fertility needs very close watching with irrigation. I am satisfied that many an orchardist is using too much water, constantly washing the fertility out of his soil.



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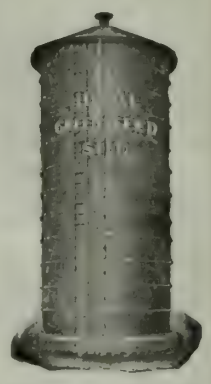

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With the Live Stock Men.

Arrangements have been made during the past week to hold the biggest consignment sale of live stock ever held in the State, at Hanford, Kings county, immediately after the State Fair in September. Ben A. Rhodes, the live stock auctioneer of Los Angeles, will be in charge of the sale, which will include registered dairy cattle, horses, mules, hogs, and sheep. Those who have already promised to consign stock to the sale are T. J. Gilkerson, M. Bassett, M. Bernstein, James McCord, and G. S. Hewitt. This looks to be a step in the right direction, as there is much good stock in the lower end of the San Joaquin valley which should do much good if distributed. Coming as it does immediately after the State Fair when interest in pure-bred stock is always keen, the sale should prove a profitable undertaking.

W. J. Hackett, of Ceres, Stanislaus county, has recently sold six head of registered Jersey heifers to W. M. Brady of Modesto. Mr. Hackett states that six of his cows have just completed yearly official tests and have been entered in the Register of Merit of the American Jersey Cattle Club, and that he has three more cows on test at this time.

Reports from Imperial valley state that farmers in that section are increasing the size of their swine herds, and that by winter the hog population there will be back to the normal amount carried a few years ago, before disease became a factor.

Creameries of Fresno county paid out to dairymen for butter-fat received during the month of June about $73,000. This amount is somewhat more than that paid out the month previous, although the price per pound remained the same.

The Maloney cattle ranch, near Hornitos, Mariposa county, has been sold to H. F. Keeler, of Lancaster, for $30,000. This is one of the best known ranches in Mariposa county, and is in a good cattle country.

A dispatch from San Diego county is to the effect that the McLaran company, said to be the largest cheese manufacturers in this country, are contemplating the erection of a cheese factory at or near San Diego.

Fines aggregating $30,000 were levied against eight railroads at Chicago last week for violation of the law which provides that live stock in transit must be fed and watered at least once every 24 hours.

R. M. Dunlap, herd manager for the Simon Newman herd of Herefords, writes that he has turned the fitting of this year's show herd over to Geo. Pirie, who is putting the bloom on them in a way to win the approval of all visitors at the State Fair this year. As a matter of fact, this herd always makes a fine appearance at the shows, yet Mr. Dunlap promises that the condition of this year's herd will outclass all past efforts.

Last Monday broke all previous records for a single day's receipt of cattle at the Portland Union Stock Yards. The bulk of best steers sold at $6.75 to $6.90, the extreme top being $7. Cows, sold at $5.85, bulls at $4.50, and calves at $8. The trade demand for swine was keen, both outside and local buyers bidding sharply for firm finished light hogs. The market advanced to $8.50, where it remained firm. Most of the sheep house business was in ewes and lambs, a few yearlings selling at $4.75 and some wethers at $4.35. Prime fat ewes were steady features at $4.25, lambs at $6.

J. W. Benoit, of Modesto, states that he is now doing some official testing in his herd of registered Holsteins and that he expects to start more on the test in the near future. He still finds the Hinman milking machines very satisfactory and says he would not be without them.

A. P. Harwood and H. S. Williams have purchased 200 acres near Porterville, which they will seed to alfalfa and develop into a stock ranch in the future.

Reports from Turlock are to the effect that the Borden Condensed Milk Co. may build a condensing plant at that place in the near future. A representative of that company visited Turlock last spring and reported favorably on the location.

A correspondent writes from Merced county that hog cholera has done a great deal of damage to hog men in the vicinity of Atwater and Livingston, and that many of the herds were entirely wiped out.

M. Beltrami and P. Consoli, of Petaluma, have recently purchased a 70-acre ranch near Oakdale, Stanislaus county, which they will convert into a dairy and stock ranch.

Members of the California Swine Breeders' Association recently decided at a meeting in Stockton not to hold the consignment sale of registered hogs which they had planned on holding, due to the fact that the demand for breeding stock is already more than they can supply.

Dairymen in Kings county have just received $130,000 for butter-fat sold during the month of June. The average price paid for the month was 28 cents per pound, which is a slight improvement over the price for the month just preceding.

James Thorpe, the Jersey breeder of French Camp, San Joaquin county, is churning his own butter-fat and retailing the butter in Stockton.

According to Dr. A. D. Melvin, head of the government's bureau of animal industry, the present high price of meats is due to an undoubted scarcity and there is no prospect of an early increase in the supply.

The creameries of Tulare county paid out last week about $63,000 for butter-fat received during the month of June. Prices for the month ranged between 27 and 31 cents per pound, as against 26 to 30 cents the month previous.

A noticeable feature this year is the large acreage of corn that one sees in almost every locality. While much of this will be harvested for grain, a large part of it will also be used for silage.

James Barry of Cottonwood, Shasta county, writes to inform us that cattle in the vicinity of Mt. Lassen are not being affected by fumes, as was reported by us in a recent issue. Mr. Barry states that both feed and cattle are in fine condition in his section.

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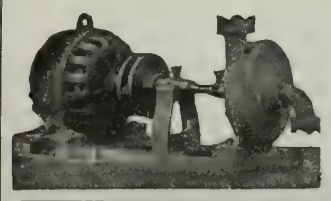

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Pigs for Good Pork.

The prime purpose in raising pigs is to produce pork and lard. This is stated by George R. Samson of the animal husbandry department of the Oregon Agricultural College, as the one point which must never be lost sight of in swine breeding, whether one allows the animals to shift for themselves or gives them all the elaborate care that fancy may dictate as contributing to the comfort of breeder or the pigs themselves.

"The point which the practical pork producer should base his selection," says Mr. Samson, "are vigor, fecundity, and efficiency in transforming feed into pork and lard. Since the best type of pig is the one which is most responsive to feed and most efficient in laying on flesh or fat, it is apparent that the pig breeders' problem is the most simple of all large animal breeders' problems.

ALERT AND FULL-CHESTED.—In any good sized litter there will appear some individuals more alert, larger, and fuller chested from the very start. Their greater aggressiveness, which leads them to avail themselves of their food supply and perhaps a part of that of their mates, gives them initial advantage which they usually keep through their sucking days. In fact it is seldom lost when they go to the feed lot where they all get all they want.

CHUBBY FEMALES DISAPPOINT.—"It is not the little fat, chubby females which should be retained as breeding animals. They neither produce large litters nor save the little ones from being crushed in the pig bed. They are not good milkers, either, and thus do not give the litter a good send-off during the suckling days.

"One should rather select the long, growthy females; taking care, however, that they do not stand too high from the ground and are not contracted at the heart girth or the rear flank. One should make sure, too, that there is no tendency for the back to sag or the feet to go down on the dew-claws. It is better to select one with some arch to the back, making sure that the arch is in the back and not in the rump. An arched rump with a low set tail means a shorter ham, and that curtails the carcass in its best part. The back should be wide, and the sides should come down perpendicularly to a low, straight underline.

SHOULD ACCOMMODATE A DOZEN PIGS.—"Width between the eyes and smoothness and freedom from coarseness about the head are of importance; but one should look to the body first, for that is the valuable part of the sow. She ought to have at least 12 good teats, with room enough between the front and hind legs to accommodate 12 good pigs.

"Having found sows that are good mothers and have large litters of good, thrifty pigs which mature quickly and fatten well, one should keep those sows and select pigs from their litters to replace the less profitable sows in the herd.

SELECTING THE BREED.—"One should select a boar of the desired breed and then adhere to that one breed. The fat hog breeds will be found most profitable under present market conditions. Duroc Jerseys and Poland Chinas are most numerous, and will offer wider range for selection of breedingstock, but Berkshires, Chester Whites and Hampshires are good, and have the advantage of being a little better rustlers than Poland Chinas. The Duroc Jerseys have larger litters on the average than the Poland Chinas, and meet with equal favor on the market.

INDIVIDUALITY IN BOAR.—"The breed is of less importance than individuality in the boar, which should be a good individual and of the desired market type, better than the sows. He should be one of a large litter.

"The average breeder would do well to buy his boars rather than use those of his own production unless his herd be pure bred. In such case he would do well to avoid in-breeding until he has found by experience the characteristics his pigs possess and transmit.

"Males intended for market should be castrated at three weeks of age, that they may recover and regain normal growth before being weaned. If they are allowed to run whole until they are of 35 or 40 pounds weight they are likely to have a coarser, more stoggy appearance which detracts from their market value. Nothing is made by spaying gilts, as the fatalities which are likely to follow will more than offset any increased economy of gains.

CROP ROTATION GOOD.—"Swine breeders should have a rotation of crops which the pigs can graze through their entire period, to keep them growing and fattening from the very start, so that they will be ready to turn off at six or seven months, when they should weigh about 200 pounds each. Shortening the period during which pigs are attaining a certain weight, other factors being equal, materially decreases the cost of the animals.

CLEAN, DRY, SUNNY BEDS.—"They should be provided with a clean, dry bed into which the sun should shine as much as possible. Having the openings and windows on the south side of the sheds will accomplish this. Expensive houses, however, should be avoided. When two litters are to be produced each year by a sow she must have a better house than when only one litter is required of her.

"As considerable difficulty attends winter litters because of lack of sunshine, one should go slowly in preparing for two litters. It should be profitable if done on a large enough scale so that the pigs are sure of proper attention.

DIET RECOMMENDED.—"Whatever plan is adopted, the breeder should be sure to see that his swine have clean, dry quarters and plenty of good food and water. Ground barley and about one-tenth tankage or one-fourth wheat middlings or skim smilk if it is available, with the run of a good forage crop, should produce pork of excellent quality, with considerable profit to the owner."

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Live Stock by Irrigation and Rotation.

[Written for the PACIFIC RURAL PRESS]

The importance of keeping livestock and of practicing a rotation of crops is becoming more pronounced in California, each year, for it is in these ways that the fertility of the soil is most surely and easily built up to a higher standard of perfection.

Both of these factors are being used to an advantage by W. L. Morris, of Yolo county, whose chief aim, during the past few years, has been to transform a 240 acre ranch from dry farmed grain into irrigated alfalfa land.

IRRIGATION FIRST.—The first step in this transforming process was the development of water, in fact without water for irrigation there would have been little hope of success. Accordingly, two wells were bored on the highest part of the ranch and a 10 inch Krogh centrifugal pump installed. The pit for these wells was dug down eight feet, and a 50 horsepower electric motor installed for power.

With this outfit the entire ranch may be irrigated in three weeks time, without irrigating at night, the water being distributed in open earth ditches, although there would be less waste if cement pipe were used in conveying the water to the fields.

With the pumping plant, as with most everything else that Mr. Morris has to do with in his farm operations, figures are kept of the number of hours the pump runs each day, each field being charged with the number of hours pumping it has been necessary to use in irrigating the land in that particular field. To facilitate this the fields have been laid out on blue prints so that each one may be more easily kept track of. With this data, experiments have shown that there is a big saving in irrigating often, before the land becomes dried out too deep.

Among other records which are considered of great value are the readings of the vacuum guage each time that the pump is started or stopped. This gives accurate data of the lift required each time, and when continued for several years shows the owner how low the water table may go, before steps need be taken for a larger development of water. In dry seasons, like that of last year, this is of special value, for with the lift becoming greater all of the time, it gives the owner an opportunity for either deepening his well or of boring new wells, when there is still time to do so without interfering with the regular irrigating of his crops. Many farmers found themselves in this predicament last year and were unable to raise normal crops on that account.

ROTATION AND STOCK.—The larger portion of the ranch is in young alfalfa which has not been planted long enough for rotation to become necessary, but some very interesting data was secured by Mr. Morris, on 30 acres of land that had not been seeded to alfalfa.

This 30 acres was divided into three plots of 10 acres each, the plan being to experiment with different crops and different systems of rotation.

The most successful of these experiments were those carried on, on the 10 acre plot, directly north of the dwelling house. This land had been planted to barley the year before and dry farmed. During the month of December, 1911, it was irrigated, plowed and harrowed, the irrigation being necessary on account of the dry season. As soon as the barley had secured a fairly good growth, 125 head of stock hogs were turned into the field and kept there until March 1, 1913. At that time the field was again irrigated and the barley let to grow, till it was about two feet high. By this time wild oats and burr clover had also taken root and was pretty well distributed in the barley. The hogs were put back for one week and then 1100 head of lambs and ewes were turned in for two weeks. By this time the field was barren of all vegetation, and it was necessary to irrigate again before plowing.

This was done June 3, after which the field was plowed, harrowed, rolled and dragged. Mr. Morris believes that the Crosskill pulverizer is the best implement for breaking clods as it does not pack the soil, as is so often the case with other implements.

Six acres of the plot were planted to pumpkins, of the following varieties: Mammoth King, China, and Cheese. The pumpkin crop was sold at $4 a ton, the total yield for the six acres being 124 tons.

The other four acres was planted to corn and pie melons and while the corn didn't do much good the pie melons did exceptionally well, they being used for hog feed. The corn fodder was also used for feeding livestock.

After harvesting the above crops the land was again planted to barley, being seeded in with a Graham seeder. No harrowing or other work was done this time. This crop was harvested June 1, 1913, the yield from the 10 acres being 346 sacks. The plot was again irrigated and run over with a randle harrow, lapped half, and dragged. This brought up a second or volunteer crop of barley, which was again irrigated in about 35 days. This was passed on by experienced grain growers as capable of running 8 sacks to the acre, but early rains interfered with the harvesting of it and it was fed off with hogs, after ripening.

At the time of our visit about the time when harvesting was started in that section this year, the field which had had no care since last year, had a good crop of volunteer barley, oats and bur clover which was to be utilized as a hog pasture again this summer.

It is unfortunate that no figures as to cost and revenue are available for this experiment for it would undoubtedly be surprising to know the total amount of money received from the 10 acres in the three years time.

While the part that livestock played in the general scheme of the experiment was only secondary, it is evident that much of the credit is due them as they converted much of the product grown, into money which would have been impossible without them. Then too, there was the value of the manure which was spread over the ground by the stock while they were being pastured.

In line with increasing the fertility of his land, Mr. Morris has added a herd of dairy cows to the farm this year, and expects to market all of his alfalfa and other feed through them and hogs.

Wherever we find the alfalfa farmer alive to the advantages of increased fertility, we usually find that the dairy cow and hog have been taken into consideration and it is this ever increasing number of livestock that is to make California a name as a livestock State in the future.

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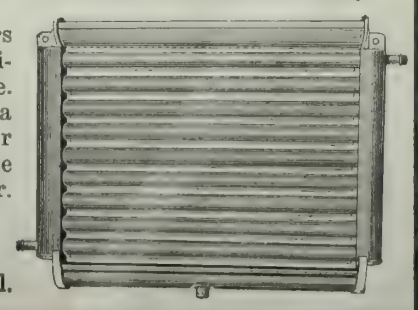

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Poultry Items From Everywhere.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

News comes from Missouri that a quarter of a million roosters were marketed on Missouri Rooster day. This ought to mean a big improvement in the Missouri commercial eggs, and a big demand for breeders next spring. But most people who keep common stock would keep a few young males and swap with their neighbors.

If we are to believe Mr. Quisenbury, of the National Egg Contest, this swatting the rooster will prevent a loss, in Missouri alone, of $1,000,000 to $3,000,000 this season.

Now, if figures don't lie, that is something for Californians to think over. The fact that farmers, in Missouri, show interest in the quality of eggs they are producing and marketing shows that they are now progressing. And in view of that, I don't know but what I will have to take back what I said about these same farmers swapping scrub roosters. Don't believe they will, and the demand for purebred males will be very large in Missouri.

Good for Missouri, the farmer who starts out to progress in poultry, is very likely to keep his hand on the plow and press forward. No playing Lot's wife and looking back for a progressive farmer. Californians need to get in line and be on the band wagon; we can't afford to let Missouri put one over on us in a small matter like this.

It appears from the report of Mr. Quisenbury that a wrong idea has gotten abroad about this swatting the rooster. He says, "The object in swatting the rooster, is not to keep bacteria out of the eggs as some seem to imagine, but to prevent chick development in fertile eggs.

Well, I would not have thought there was anybody green enough to imagine such a thing as removing the male bird would save eggs from bacteria, but it appears that you never can tell how green the other fellow is. It looks as if anybody that is actually and truly so green, need not be afraid of the brimstone hell, because they would be too green anyway, but good lands! you never can tell, they might season such greenhorns in the woodshed and then they would burn fairly well.

In this world of trials and tribulations the poultryman gets his share, and just when he thinks he has a cinch on a nice bunch of chickens he forgets some little thing that makes all his previous work count for naught. The object of these weekly papers is to remind you of some of these things that you have left, or may leave undone but you will surely have to use your own thinkers some. The biggest question now, is to keep the pullets growing so that they will pay for their board later. But they won't grow if you allow mites and lice to get among them, so don't think because you have heard this sermon before that there is no gospel in it.

Fact is, it is the true gospel of chicken raising.

When I spoke to the Riverside Poultry Association, the members accused me of being Irish, simply because I livened the talk up with a little blarney. Well, the Irish have no string on all the humor of the world. If I had not had a little streak of it, I would have been taking a long rest many years ago.

That is one great fault of the American people; "they take life too serious." You want to "let go" sometimes then get a fresh stranglehold on life; and when you go mite hunting, as all good poultrymen must do this weather, just let on you are in the African jungles with Teddy, make sport out of it and you will forget that it is work.

Now here is a liquid lice killer that is hard to beat, because it does the work so thoroughly that it does not need repeating often, so that it saves time, labor, and money, in the end.

Crude oil one gallon, crude carbolic acid one quart, crude cresote half pint, carbon bi-sulphide half pint. Do not mix until ready to use.

DIRECTIONS FOR USE.—Clean out all droppings from dropping boards, all nest material and dust, sweep if necessary, then apply to all places hard to get at with a fine spray, and paint the dropping boards with a paint brush. Be careful about getting it in your own eyes for it is pretty strong stuff.

One good application will insure you of a good vacation from lice and mites. And this is much better than to be going over the houses all the time with something cheaper, but not so good.

Here is an inquiry from a subscriber who says:

"My pullets are now four months old and have grown fine until lately when they have stopped growing and began to look droopy. Several of them have the roup, and these I catch as soon as possible and keep them separate. I don't know what to do for roup as I have nobody to advise me. I have been feeding moist mash in the morning, bran, egg food, shorts, middlings, cornmeal, rolled oats, and clabbered milk, etc. Now they tell me I ought to have given my pullets flaxmeal to help feathering and meat. What can I do to get rid of the roup? The pullets have free run over a 10-acre place.—Mrs. K. B. E.

This lady asked several other questions that would require more space than I am allowed, so I am just going to take up this one of the pullets.

When pullets are so well fed and cared for in that respect as well as these, they surely do not need flaxmeal or anything else in the food line. You failed to tell me how you brooded them, but I am concluding from the remarks of your neighbors and from the evidence of roup that your pullets have been mismanaged in their sleeping quarters. At that age they should have been roosting some time, but they are evidently crowding at night, that is what poultrymen call huddling up, bunching, etc. Now you will have to go out in the evening after they have gone up and teach them to roost, or separate them into small lots of a dozen or so. Whenever pullets get naked like, it is evidence of overheating at night. Look into this matter and get them separated at once.

For those with the roup, just get a can of Kreso dip No. 1, and dip their heads in a good strong solution, hold them in until they gasp for breath then let them breathe and dip again. Feed the sick ones nothing but dry grain; put a little coal oil in the water they drink and see that they get no other. This is easier than feeding a mash with coal oil in. But the first requisite for a roup cure is a physic. Roup in a chicken is similar to a cold in people and it needs the same common sense treatment.

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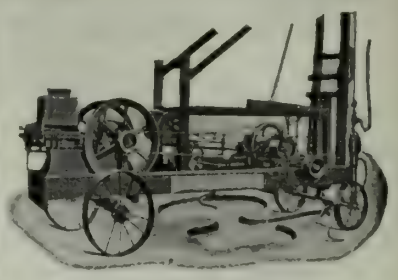
COULSON CO., Petaluma, Cal.



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INVESTIGATE
The opportunities for the homeseeker and business man
—Along the Line of—
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1,500,000 Acres
of good improved and unimproved lands, offering every possibility
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Write for a copy
"Opportunities"
"Homeseekers"
Folders listing and explicitly describing possibilities of this new country.

BODE K. SMITH
Assistant Gen. Pass. Agent
WESTERN PACIFIC RY. CO.
SAN FRANCISCO

Your pullets have been well fed and ought to be showing up well now, but crowding at night knocks all the rest of the care you can give.

This subscriber asked for a personal reply to this and several other questions without even sending a stamp. Now friends, the PRESS and I both would soon go bankrupt if we did business on that plan. When anything is important, send a stamped envelope and ask your question in a direct manner and I will be glad to help you, but I am not a lawyer, medical advisor, chicken crank, and everything all in one. So you will see that I have to draw the line somewhere, though, honest, I hate to do it.

THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION EGG LAYING CONTEST.—The name is certainly imposing, but as far as I can see, that is about all the benefit to be derived from entering a pen. Not only for your aunt Samantha. When I pay $25, and give the other fellow 10 of my best hens just so he can collect the eggs from, and eat or sell them to somebody else, I shall need a certificate for Napa.

The Panama-Pacific show is also another thing being advertised, that so far is not very enticing to the exhibitor. In the first place, they advertise that no entry fee will be charged. Then they say single specimens will be charged at the rate of $1.50 a head and pens $4. What are they judging with, exhibitors or dollars? I just make this suggestion, and don't care whether anybody seconds it or not, if they don't put somebody on the Panama-Pacific show staff, who knows what is right, they had better save their money and spend it in other lines of legitimate business, not in trying to fool poultrymen.

Nothing doing, (I was going to say "Frisco," but our Editor doesn't like that word so I will say) San Francisco. Unless you mend your bill of fare for exhibitors you will have a lot of empty coops.

"BEST ON THE SURFACE OF THE EARTH"

"AMERICAN" Surface Irrigation Pipe

The pipe with the original double-locked turned seam — stronger — more durable — more convenient — more satisfactory in every way than riveted pipe, and far superior to any other surface irrigation pipe of any character. In lengths 10 feet 6 inches.

Let our irrigation engineers solve your problems—FREE.
Don't experiment with unknown pipe—get the tried and tested "American." Write for catalog.
Also manufacturers of ORCHARD HEATERS.

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ECONOMICAL IRRIGATION BY PUMPING

Illustrating and describing the various types of irrigating plants in use.

WILL HELP YOU DECIDE WHAT YOU NEED

Write Today Write Today

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GALVANIZED SHEET IRON
4—5—6 inches. 10-ft. lengths

PRICES RIGHT 201 Main St., San Francisco

Eilers Bungalow Player Piano

THE MOST MODERN OF ALL PLAYER PIANOS

Sweet-toned! Durable! Satisfying!

Small enough for a tiny apartment

Large enough for a big hall

Appropriate for any mansion

The Latest! The Best!

Plays every note on the keyboard

Your "silent" piano taken in exchange

$485

buys an Eilers Bungalow

$2.50

per week pays for it

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Gentlemen: Please send me full information regarding the Bungalow Player Piano.
Name .....
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Eilers MUSIC HOUSE
HOME OF THE CHICKERING PIANO
975 Market Street, San Francisco

The Home Circle.

The City Water Supply for the Farm Home.

[Written for the PACIFIC RURAL PRESS by E. P. GIBSON.]

During the fall of 1913, Secretary of Agriculture Houston sent 55,000 inquiries to the wives of the crop reporters throughout the country to determine the needs that were formost in the minds of these farm women. It is interesting to note that far above any other need expressed in these replies was that of an ever-ready supply of hot and cold water and sanitary plumbing. Thinking seriously of it now, what could be more welcomed than these things replacing the old-time pump handle and the wash-tub bath in the wood house?

By an ever-ready water supply we mean a system that requires no attention whatever. The water is available at the tap day and night, as it is in the cities and towns. There must be no starting or stopping of the pump by an attendant. The only possible way that this can be accomplished is by the use of the electric motor. Where electric power is not available a gasoline engine may be used that will stop when the tank is full of water, but it must be started by hand, so this cannot be called an automatic system.

The open-tank system is most commonly used where the water is pumped into an elevated tank and flows by gravity to the outlets. Many ranchers have these tanks installed and pump the water with a windmill or engine, starting and stopping the apparatus by hand. Let us take a case of this kind and change it to the automatic system.

The pump, well, tanks and piping do not need to be changed. The following is a list of the necessary devices with their approximate cost:

Pump jack, 11 to 1 gear reduction.	$18
1-H.P. single-phase, 1800 R. P. M., 220-volt motor	75
Float switch and accessories	10
Belt, 3 in. wide and 10 ft. long	2
Wiring, etc.	5
Total	$110

This outfit is capable of handling 40 gallons per minute under a head of 50 feet, which is large enough to take care of the average windmill outfit.

The pump should give between 30 and 40 strokes per minute. Due to the high speed of the motor a pump jack must be used that will give the proper speed reduction when the motor is belted direct to the jack. An 11 to 1 gear reduction will serve the purpose. The balance of the reduction can be obtained through the pulleys on the motor and jack.

The float switch is a very simple arrangement. A large copper ball floats on the water and is connected to a counterweight on the outside of the tank by means of a small chain running through guide pulleys. On this chain are two lugs or buttons that can be adjusted in any position. When the tank is empty, or nearly so, the lower lug trips in the switch and the motor and pump operate. When the tank is filled to the proper level the counterweight pulls the chain down so that the upper lug throws out the switch. The process is repeated continuously as the water is drawn from the tank. A few drops of oil once a month is all that is necessary in the way of attention.

I will venture to say that 80% of all of the water systems I have seen throughout the country, where an overhead tank is used, are arranged so that the water is brought from the pump over the tank and into the top. This is poor practice. The water should be brought into the bottom of the tank and a check valve put into the pipe to prevent the water draining out. This same pipe could then be used to deliver the water from the tank. In the former method it requires power to lift the water that extra distance, and when the tank is empty that difference in power will amount to no little sum. When the tank is full, the difference is not so great, but for a tank 12 feet high, pumping 3 hours per day with power at 4 cents per kilowatt hour, there can be a saving in the power bill of from $12 to $15 per year by the latter arrangement.

If the pump and tank are not already installed it will mean a larger investment, but any local dealer will gladly furnish an estimate of the cost of these.

Now, Mr. Rancher, don't you think the farm women are entitled to a comfort such as just described? Give them the hot and cold water and the sanitary plumbing, all of which goes to make their work easier and the home life more cheerful.

This same water supply system would water your stock, wash the buggy or auto, irrigate the garden, and above all you would have the satisfaction in knowing that you had a tank full of water to protect your home and barns in case of fire.

ALL-NIGHT PORCH LIGHTS.

The advent of the 10-watt tungsten lamp makes it entirely possible to burn porch lights all night without making any appreciable difference in the monthly bill for electric light. At rates now prevailing in Fort Collins, 10 cents per kilowatt, the total cost of burning one of these lights all night is about one-tenth of one cent per day, or three cents per month.

Lights of this kind, where generally used, give very satisfactory street illumination, besides giving protection against burglars, etc. It seems that central stations should encourage a move of this kind, as it would benefit the entire community. And while these lights are burning during the off-peak period, the rate could be made very low or they might be kept burning without charge to the consumer. While it would not seem advisable to have lights of this kind wired off the meter, it would be an easy matter to discount the monthly bill by the lights estimated monthly consumption. Lights of this kind should also be installed so as to make the house number visible at night.—F. J. RANKIN, Colorado Agricultural College.

An Ohio man tells of a farmer in that State who, even in the hour of adversity, could think of others. An unseasonable frost had completed the damage done by the insects to his potatoes. The tops of the plants, which had served as pasturage for the pests, were wholly destroyed. Meeting him at the postoffice one day, a friend asked: "How are you, Tom? Things goin' well?" "Goin' well!" exclaimed the old man, "I should say not! There's trouble and plenty of it! Why, up at my place there's nine million potato-bugs, an' nothin' for them to eat."

Salicylic Acid Poisoning.

The attention of the Department of Agriculture has recently been called to the widespread use, especially in rural communities, of salicylic acid in putting up preserves. The head of a large drug and chemical supply house states that people have been purchasing salicylic acid in one-fourth pound packages for a number of years and that this practice has grown to an enormous extent. This dealer states further that only a few weeks ago he received an order from one wholesale grocer for 50 gross of these goods.

This practice is not confined to salicylic acid under its own name alone, but large quantities of this, and of boric acid as well, are sold under fanciful names as preserving powders or canning compounds at prices which are much in excess of their real value.

These powders may prevent the decay of fruit or vegetables, but they also encourage uncleanly or careless work; and their excessive use may be attended with very serious effets upon the health. Salicylic acid is a medicine of the greatest value in acute articular rheumatism and certain other diseases. It is well known as a poisonous substance, and one of the evils which may accompany its use is derangement of the digestion.

It is entirely practicable to put up both fruits and vegetables in such a manner that they will keep indefinitely by sterilizing them with heat; and there is no excuse for running any risk by the using of preserving powders. The Department of Agriculture has issued the following Farmers' Bulletins on canning and preserving:

F. B. 203 Canned Fruit. Preserves and Jellies.

F. B. 359 Canning Vegetables in the Home.

F. B. 521 Canning Tomatoes at Home and in Club Work.

These bulletins, which may be obtained without cost by applying to the Division of Publications of the Department, give exact directions for canning and preserving foods without the use of preserving powders or canning compounds.

Some Live Subjects for Discussion at Farmers' Meetings.

1. Do country schools train boys and girls for farm life?
2. Which is better on the farm, bath tub or automobile?
3. Does speculation help to fix farm prices?
4. Cost and benefits of an Agricultural College education.
5. How can consumer buy direct from producer?
6. Do mothers teach daughters thorough housekeeping?
7. How does the Experiment Station help the farmer?
8. How to beautify homes, school houses and churches.
9. Does the farmer know how much he has invested.
10. Is the renter or retired farmer the least interested in the welfare of the community?
11. Who has the best-kept farm home in the community?
12. Are the teachers and preachers practical in their work?
13. Do housewives favor the teaching of domestic science?
14. Why do many farmers neglect to paint their buildings?
15. Why do farmers permit weeds to grow in roads and fence rows?
16. Do farmers make use of the parcel post service?
17. How can the county fair be improved?
18. Is it a disgrace to keep a scrub animal on the farm?
19. Is there such a thing as farm arithmetic?

Ready
at the touch of a match

With a good oil cook stove there's no delay or bother—no lugging of wood, coal or ashes. There's no smoke—no waiting for the fire to "catch up". Cooking starts at once and when you're through you simply turn off the heat—no fuel wasted. The

New Perfection
OIL COOK STOVE

is not just a "quick lunch", light housekeeping affair. It is a complete all 'round stove that you can bake, broil and roast on just as well as on a wood or coal range—and a lot cheaper. Best of all—it doesn't overheat the kitchen. An ideal summer stove. Doesn't smoke. Doesn't taint the food.

Dealers everywhere.

Standard Oil Company
(California)

FOR BEST RESULTS USE PEARL OIL

20. Does agricultural extension work help the farmer?
21. Does the housewife use labor-saving devices as much as the farmer?
22. Do some farmers waste their labor and profit by planting poor seed?
23. What is the strongest influence that keeps boys on the farm?
24. Should the school house be made a meeting place for the community at least once a month?—Colorado Agricultural College.

Preventing Tins from Rusting.

The principal objection that is raised against tinware is that it rusts so easily. But as it is so cheap and has so many distinctive uses it is well to know how to offset this disadvantage. Before using a new tin, take it and rub it well with fresh lard, inside and out. Put it into the oven and let it get hot. When thoroughly heated put it away. It will not rust after that, no matter how often it is washed.

"Have you ever heard Jimkins relate about the time he got halfway up Mount Blanc with one of his little nephews and no guide?" asked one man of another.

"How long ago did he tell you about it?" was the evasive reply.

"Last year, when he'd just got home," said the first man.

"Well, said the other, "in eight months since then he has climbed the rest of the way, succoured a fainting guide, and sustained a snowstorm on the summit, resusticated two benumbed strangers on the way down, and guided the entire party to the foot, where a group of frantic relatives was waiting."

O. Henry, beloved by every editor in the country, sometimes was the bane of their lives, but no one could harbor wrath against him. The humorist had promised to write a story for a big magazine, which failed to arrive. Finally the editor went to O. Henry's apartment and sent up a curt note: "If I don't have that story within twenty-four hours, I will come up and kick you downstairs. I always keep my promises." O. Henry promptly sent back the note, "Dear Bill: If I did all my work with my feet, I'd keep my promises, too."

"What has become of the big man who used to beat the bass drum?" asked the private of the drum-major. "He left us about three months ago." "Good drummer, too, wasn't he?" "Yes, very good; but he got so fat that when he marched he couldn't hit the drum in the middle."—Melborune Leader.

Child Visitor: "Mrs. Jones, please can I go upstairs in your room and look in your closet? Hostess: "Why, Willie, what do you want in my closet?" Child Visitor: "I want to see the skeleton pa says you've got there." —Baltimore American.

DRINK "QUALITY" TEA AND COFFEE

From IMPORTER to CONSUMER direct by PARCEL POST

"CHA-MA" - - - - 60 CENTS A LB.
A FAMOUS GREEN UNCOLORED JAPAN TEA

"NIN-GAR BLEND" - 50 CENTS A LB.
A DELICIOUS BLACK ENGLISH BREAKFAST TEA

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OF THE CHOICEST BLACK TEAS IN THE WORLD
PACKED ONLY IN 1-LB. ABSOLUTELY AIR-TIGHT TINS

"E-CIL-A BLEND" 1 LB. 40 C; 3 LB. $1.00
A CHOICE BLEND OF PURE COFFEE
PACKED IN AIR-TIGHT PACKAGES
ALL POSTAGE PAID BY US. MAIL ORDERS TO

THE WM. J. SCHROTH CO.
112-A MARKET STREET SAN FRANCISCO, CAL.

Our Young Folks

Fred and Carlo.

Little Fred Keith had no brother nor sister to play with; and, when company came, he was very selfish with his playthings.

One day his father brought home a beautiful collie. "Now, Fred," he said, "Carlo is to be your pet; but you must treat him kindly, and not be selfish."

They had grand frolics when they went for a walk together. If Fred threw a stick into the pond, Carlo would always swim out and bring it back.

One bright morning in July, Fred went out into the pasture to pick berries. He carried two small pails, in one of which mother had packed a nice luncheon. Carlo trotted along, carrying the empty pail in his mouth.

The blueberries hung in clusters on the low bushes; but the sun was hot, and before one pail was filled, Fred decided that it was surely dinnertime. He sat down in the shade of a tall laurel-bush, and began to eat a sandwich. Carlo smelled the meat, and begged for a piece; but, though his big brown eyes were wistful and he held up both paws, Fred took no notice.

"I'm real hungry, and I want it all myself. You can catch a squirrel," he said at last.

The second sandwich was half gone, and Carlo's eyes looked sad. "Carlo has been chasing a rabbit all the morning. P'raps he is as hungry as I am. I guess maybe he can have this ham and cake, and I'll eat the pie."

Carlo barked a joyous "Thank you!" and somehow Fred's pie tasted twice as good as usual. Then they ran down to the spring and drank some of the clear water.

When both pails were full they started for home. Faithful Carlo carried one pail so carefully that not a berry was spilled.

The next afternoon Fred took Carlo for a walk in the fields. Grandfather's barn where he kept his salt hay stood all by itself in the pasture, and near by was an old cellar. Fred went to the edge to look over, a stone loosened, and he fell in. He tried for a long time to climb out, but each time he fell back.

Carlo ran round the edge, barking. Then he jumped in. Fred was glad that he did not leave him alone. He called for help until he was tired. The sun went down, and a few stars began to peep out. Then he called with all his might, but the only answer was an echo from the old barn. By and by he lay down beside Carlo, and cried himself to sleep.

When he awoke, the moon was shining brightly. He remembered a gingersnap that was in his pocket. "I'll give Carlo half, the dear doggy!" he thought. Out came the cooky, and his little blank-book with it. Fred shouted with delight as he emptied his pocket. It was full, like all boys' pockets; and, sure enough, there was a stubby pencil and some string.

He tore a page from the book, and wrote:

"Dear Mother: I'm in the old cellar, and can't get out. Fred."

He tied the paper round Carlo's neck. Then he piled up all the rocks until he could reach high enough to help Carlo out.

"Go home quickly, Carlo," he said; and the dog leaped away. Lanterns were flashing into dark corners, and all the neighbors were hunting for Fred. Mrs. Keith ran to the door when she heard Carlo's bark. How she did hug him after she had read the note!

"Mother," exclaimed Fred, when he had eaten supper and finished telling the story of his adventure, "I'm glad that I gave Carlo some dinner yesterday. If he had not helped me, I'd be in the old cellar now."

"Yes," said his mother, "Carlo is a true friend. I should be very sorry if my little boy were selfish to such a good dog."—Fay Stuart, in the Morning Star.

The Little Loaf.

Many years ago there was a great famine in Germany, and the poor people suffered from hunger. A rich man who loved children sent for twenty of them, and said to them: "In this basket there is a loaf of bread for each of you. Take it, and come back every day till the famine is over. I will give you a loaf each day."

The children were very hungry. They seized the basket and struggled to get at the largest loaf. They even forgot to thank the man who had been kind to them. After a few minutes of quarreling and snatching for bread, every one ran away with his loaf except one little girl, named Gretchen. She stood there alone at a little distance from the gentleman. Then, smiling, she took up the last loaf, the smallest of all, and thanked him with all her heart.

Next day the children came again, and they behaved as badly as ever. Gretchen, who would not push with the rest, received only a tiny loaf scarcely half the size of the others. But when she came home, and her mother began to cut the loaf, out dropped six shining coins of silver.

"O, Gretchen!" exclaimed her mother, "this must be a mistake. The money does not belong to us. Run quick as you can and take it back to the gentleman."

So Gretchen carried it back; but when she gave the gentleman her mother's message, he said: "No, no, it was not a mistake. I had the silver baked into the smallest loaf in order to reward you. Remember that the person who is contented to have a small loaf rather than quarrel for a larger one will find blessings that are better than money baked in bread."—Ella Lyman Cabot, in Ethics for Children.

Willie came home from school crying bitterly. "Mother," he sobbed, "I'm not going to try and be good any more."

"Why, Willie, whatever is the matter?" inquired his mother.

"Boo! hoo!" sobbed Willie. I was in school today, and I—I saw Teddy Smith put a bent pin on the t-teacher's chair, and b-because I did not want teacher to sit on the p-pin I—I pulled his chair away, and he sat on the floor. He gave me a thrashing for pulling his chair away, when he got up, and when I got outside the school Teddy Smith hit me for pulling the pin a-away, and not mindin' my own b-business."

George Washington (smoked) says his idea of a mollycoddle is the coon who says "behave" instead of "shut up," and another kind the "smoke" who carries a safety razor!

A-C-C Coffee & Tea

Direct from Importer to Consumer.

A-C-C Coffee

A PURE COFFEE OF RICH FLAVOR AND STRENGTH

3 lbs. in air-tight tin for $1.00

delivered postpaid to any address within 150 miles of San Francisco, or $1.10 delivered within 600 miles.

1 lb. air-tight tin, 40c postpaid

Send your orders direct to us. We sell you direct and deliver by Parcel Post.

A-C-C Tea

Dalmoy Blend — The choicest tea the world produces..... 75c per lb.
London Blend — A delicious India English Breakfast tea..... 50c per lb.
Sa-Sa-Ma — Pure uncolored natural leaf Japan tea..... 60c per lb.

Packed only in 1-lb. air-tight tins.
We Pay Postage.

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244 California Street San Francisco

THE STEPHENSON PATENT COOLER.
NO ICE REQUIRED.

Perfect ventilation.
Absolutely sanitary.

Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.

L. ANDERSON CO., Mfrs.,
MARTINEZ, CAL.

MISS HEAD'S SCHOOL
2538 Channing Way, Berkeley

Boarding and day school for girls. Catalogue sent on request. 27th year begins Aug. 18, 1914.

MISS MARY E. WILSON, Principal.

BIG MONEY in the OFF SEASON

One Man can run it.

There's a big demand for Irrigation wells throughout California and the Southwest. *You can Make Big Money during your spare time with the*

IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE

Bores a 100 foot well in 10 hours. Will go through gravel, sand or clay; drills through rock. One team takes it over any road. Operated by same team or by gas engine if preferred. No tower or staking; rotates its own drill. FREE Catalog; Easy Terms.

Lisle M'f'g. Co.
Dept. 3,
625 Third St.,
San Francisco Cal.

First City Man: "How are you getting on with your venture?" Second ditto: "I've been swindled. I bought three incubators of different makes, and not one of them has laid an egg yet!"—Woman's Journal.

THE MARKETS.

San Francisco, July 22, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The local trade is quiet, most of the arrivals here being on orders. Prices are rather easy, with a slight decline in several varieties, and the Northern market, which is the controlling factor here, is expected to get down to a European export basis before long. New Club for September shipment is quoted at about $1.50.

California Club, ctl....	$1.57½@1.62½
Forty-fold	1.57½@1.60
Northern Club	1.57½@1.62½
Northern Bluestem ...	1.60 @1.62½
Northern Red	1.52½@1.60

BARLEY.

The December option shows more activity than for some time, but spot business here is quiet, arrivals being about even with the jobbing demand. Quite a large business is being done for export, however, and the shipping movement at Port Costa is actively under way. It is reported that the export movement will be unusually large.

Brewing and Shipping.	$1.00 @1.05
Choice Feed, per ctl....	0.97½@1.00
Common Feed	Nominal

OATS.

No further change is noted in this line, and the demand is light, with limited offerings.

Red Feed	**$1.00 @1.10**
Gray	**Nominal**
White	**1.25 @1.30**
Black Seed	**Nominal**

CORN.

Eastern yellow has been marked up a little, but there is no large movement here. Several arrivals on the Coast from the Orient and South America have been reported, but this stock does not move off very readily.

California Yellow	**Nominal**
Eastern Yellow	$1.82½@1.85
Eastern White	**Nominal**
Egyptian	**1.80 @1.85**
Milo Maize	**1.80 @1.85**

RYE.

There is no trading worth mentioning in the local market. Prices are held steadily, with no large lots offering.

Rye, per ctl.	**$1.50 @1.60**

BEANS.

Local dealers report a very fair demand for this time of year in the general bean market, and the scattered lots remaining in the State are rapidly being cleaned up. Prices show little change, but pinks and Mexican reds have ben marked up a little, and all descriptions are firm. Little business has yet been done here on the new crop, which promises to be very large in most lines. The lima outlook is excellent, both for quantity and quality, but witn no carry-over good prices prevail for early shipments.

(On wharf.)

Bayos: Cal., per ctl....	**$7.00 @7.50**
Mexican	**4.50 @5.00**
Blackeyes	**7.75 @8.00**
Cranberry Beans	**4.25 @6.00**
Horse Beans	**1.90 @2.15**
Small Whites	**5.00 @5.25**
Large Whites	**3.90 @4.50**
Limas	**6.85**
Pea	**4.25 @4.50**
Pink	3.90 @4.10
Red Kidneys	**Nominal**
Mexican Red	6.50 @6.75

SEEDS.

Business is extremely light in all lines at present, with practically no demand and little new stock on hand.

Alfalfa	**12½@15 c**
Brown Mustard, per lb....	**3¾c**
Canary	**7 @ 7½c**
Hemp	**2½@ 3 c**
Millet	**2½@ 2¾c**
Timothy	**7½@ 8 c**
Yellow Mustard	**Nominal**

FLOUR.

Conflicting reports are received as to the export outlook, but some Northern interests claim a good volume at present. Local business is quiet, as the large wheat crop would indicate some weakening of prices during the fall.

Cal. Family Extras....	**$5.80**	**@6.20**
Bakers' Extras	**4.80**	**@5.40**
Superfine	**3.90**	**@4.20**

Hay and Feedstuffs.

HAY.

The expected increase in arrivals has not materialized, being about the same this week as last, and prices are no lower. The demand is very slack, as consumers are buying only what is absolutely needed. They apparently still look for lower prices when the large quantities in the fields have to be moved. Ordinary grades of hay receive little attention, the only active demand being for good wheat hay, which is arriving fairly well from Contra Costa county, and sells in some cases as high as $11 per ton in this market.

No. 1 Wheat, or Wheat and Oats	**$ 9.50@10.00**
do No. 2	7.00@ 9.00
Barley	**6.00@ 8.00**
Tame Oats	**7.00@11.00**
Wild Oats	**6.00@ 8.00**
Alfalfa	6.00@ 9.50
Stock Hay	**5.00@ 6.00**
Straw, per bale.....	40@ 55c

FEEDSTUFFS.

The general demand continues light, but some lines, particularly bran and shorts, are rather scarce, and are quoted at a slight advance. Otherwise values are rather easy, alfalfa meal being plentiful and cheap.

Alfalfa Meal, per ton....	**$17.00@18.00**
Bran, per ton.....	25.50@26.50
Oilcake Meal	**34.00@35.00**
Cocoanut Cake or Meal..	**26.00@27.00**
Cracked Corn	**41.00@42.00**
Middlings	32.00@33.00
Rolled Barley	**21.50@22.00**
Rolled Oats	**28.00@29.00**
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

The general demand keeps up on about the same scale as last week, but the supply shows considerable variation, causing numerous changes in prices. Green peas are a little higher on limited offerings, and string and wax beans have also been marked up a little, while limas are lower. Some offerings of tomatoes bring a little better values than last week, but supplies are still rather excessive; and bell peppers are lower. Cucumbers and eggplant are considerably lower, and summer squash, okra, etc., are fairly plentiful. Ordinary lots of green corn are moving about as before, though some choice lots from Alameda county are higher.

Cauliflower, dozen	**40@ 70c**
Green Peppers, lugs.....	50@ 75c
Carrots, per sack.....	**35@ 50c**
Green Peas, lb.....	2½@ 5c
Tomatoes: Southern, crate	30@ 40c
Delta, lugs	70c@ 1.50
Beans: Wax	2½@ 4c
String	2½@ 4c
Lima Beans, lb.....	4@ 5c
Cucumbers, lugs	35@ 50c
Eggplant, lugs	50@ 65c
Green Corn, sack	75c@ 2.00
Summer Squash, box.....	25@ 50c
Cream Squash, box.....	50@ 60c
Okra, box	50c

POTATOES AND ONIONS.

River stock is now becoming fairly plentiful, and outside offerings are no longer quoted. Both new potatoes and River Burbanks are lower. Crop conditions here are good, while a shortage is reported in the northern market. Sweet potato shipments from Merced began last week, and the new stock is bringing good prices. The early red onions are about cleaned up, but yellow onions are coming in freely from the delta, and large shipments are going East.

Potatoes:	
River Burbanks	90c@$1.25
New Potatoes, lb.....	1@ 1½c
Sweet Potatoes, lb.....	5@ 6c
Onions: New Yellow, sack	2.00@ 2.25
Garlic, new, per lb.....	5@ 8c

Dairy Produce.

POULTRY.

The demand this week has been very light, but arrivals are not heavy, and dealers have managed to keep prices about up to the old level. Roosters, however, will not bring over 25c at the outside. Ducks are very dull, and the inside figure has been reduced.

Large Broilers	19 @20 c
Small Broilers, per lb...	19 @20 c
Fryers, per lb.....	20 @21 c
Hens, extra, per lb.....	17 @18 c
Hens, large, per lb.....	17 c
Small Hens, per lb.....	16 @17 c
Young Roosters, per lb..	22 @24 c
Squabs, per doz.	1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00

BUTTER.

The butter market has been inclined to sag this week, as the local demand is nothing extra, and offerings are liberal, bringing extras down 2c. Prime firsts are up ½c, firsts standing as before.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	26	26	25½	25	25	24
Prime Firsts ..	23	23	23½	23½	23½	23½
Firsts ...	23	23	23	23	23½	23

EGGS.

Eggs are moving upward, extras showing an advance of 1½c and lower grades also are a little higher. Arrivals are falling off, and conditions favor a fairly firm market. The advance has stopped the shortage movement, and has brought in considerable Eastern stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	28	28	28	28½	29½	30
Firsts ...	24	25	25	25½	25½	25½
Selected Pullets..	24	24	24½	24½	24½	25

CHEESE.

Local flats are slightly higher, Y. A.'s remaining as before, with little change in conditions. Offerings of Monterey cheese are large, and prices have been marked down 1c.

Fancy California Flats, per lb...	14 c
New Young Americas, fancy.....	15 c
Monterey Cheese	13@14 c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter: Extras..	26	25½	26	26	26	26
Eggs	28	28	28	28	28	29
Cal. Cheese: Flats ...	12½	13	13	13	13	13

Deciduous Fruit.

In the berry market, strawberries are very plentiful and cheap, with comparatively little demand, and raspberries are also very easy, while blackberries are doing a little better. Huckleberries are beginning to arrive, and clean up well at the appearing quotations. Apples show very little change, the movement being fairly good, both locally and for shipment. Nectarines are offered at about 50 to 75c per crate, and find the usual limited demand. Supplies of apricots keep up fairly well, and find sufficient demand to maintain the old prices; while peaches are quite plentiful and easy. Plums and pears are steady, with liberal offerings and a good demand, while a good many prunes are selling in lugs at about $1. Black figs are a little easier. Arrivals of seedless grapes are rapidly increasing, but the demand is strong and there is no difficutly in getting top prices for either crates or lugs. Watermelons are much lower, and cantaloupes are moving freely at the old prices, with abundant supplies from various quarters.

Huckleberries, lb.	10@12½c
Blackberries, chest	$ 2.00@ 3.00
Raspberries, chest	1.50@ 2.50
Loganberries, chest	4.00@ 5.00
Raspberries, chest	2.50@ 5.00
Strawberries, chest	2.00@ 2.50
Apples, New Crop:	
Astrakhans, box	50@ 1.00
Alexanders	50@ 85c
Gravenstein	50c@ 1.25
Crabapples	50c@ 1.00
Nectarines, crate	50@ 75c
Apricots, crate	50@ 75c
do lugs	75c@ 1.25
Pears, box, large.....	1.25@ 1.75
Peaches, crate	25@ 40c
do lugs	65@ 80c
Plums, crate	25@ 40c
do lugs	50c
Figs: Black, single layer	75@ 90c
Cantaloupes, crate	$ 1.00@ 1.25
Watermelons, doz.....	1.25@ 2.00
Grapes, crate	75c@ 1.25
do lugs	1.00@ 1.25

Dried Fruits.

Quotations are now given on new crop evaporated apples and black figs. Old peaches are about cleaned up, and trading is limited to the new crop, on which 4c is given as the top figure; while pears are lower. The buying season in the country is about at its height, and packers are picking up a large quantity in all lines. They say, however, that the market shows no great strength, as the demand is still rather light, both for Eastern and European account, and they consider that the crop, as a whole, will be large, notwithstanding a shortage in some lines. Most descriptions, however, are holding up fairly well, as growers are pretty well informed as to crop conditions, and are unwilling to make concessions from the present figures. Considerable effort has been made in the last month or so to bear the market, but such efforts have had little success, and the local trade is getting into the market on the present price basis. The New York Journal of Commerce says: "Advices from the Coast indicate that there is a desire on the part of packers of prunes to sell on October contracts. Offerings are quoted on a basis of 5½c for 40s to 60s, but bids a fraction less were accepted on one or more carloads. New York buyers are awaiting further development in prices before anticipating later wants. Spot prunes are easy.

"New crop apricots are receiving some attention from jobbers, and the market is firmer on both extra and extra choice in 25-lb. boxes; sales are reported for accounts here out of late arriving lots at 12½c on choice and 13c for extra choice, but buyers are only taking their immediate wants.

"Outside packers of raisins, 1914 crop, advanced the price ¼c on choice and fancy seeded in one-pound cartons for October shipments from the Coast; the market is 6¼c for choice and 6¾c for fancy. August-September shipments of seeded raisins from the Coast are offered at 6⅛c on choice and 6½c on fancy in one-pound cartons, but not much interest is shown by buyers here."

Evap. Apples, 1914.....	6 @ 7 c
Apricots, 1914	8½@ 9 c
Figs: White, 1914.....	3c
Black	2 @ 2½c
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	5¾@ 6½c
Peaches, new	3½@ 4 c
Pears	8 @ 9 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@ 4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

The demand for the best grades of Valencias is good, and the Eastern markets are in good shape. Fruit of mediocre quality is not selling to any advantage and does not seem to be wanted by the trade. As Eastern-grown deciduous fruits are beginning to arrive, any material increase in receipts of Valencias on these markets will, without doubt, lower the prices on Valencias. Heavy shipments have been made of Valencias from the Coast during the past week and should shipments continue to increase, as now seems probable from the position taken by many growers, a lower market is certain.

The return of hot weather in some of the Middle Western markets has strengthened the lemon markets in those sections somewhat, but the Eastern markets are demoralized on account of the large quantities of poorly packed imported lemons.

The New York market was strong and somewhat higher on strictly fancy Valencias, July 20, at which time 26 carloads sold for an average of $2.15 to $4.55 per box. The Philadelphia market on the same date was steady, six cars of Valencias selling for an average of $2.75 to $3.15. Lemons were quoted on the St. Louis market at $4.15 to $4.20, and on the Boston market at $3.05 to $3.40.

Prices on all lines stand unchanged in the San Francisco market, at the old quotations. The local trade is rather quiet, the orange business be-

ing interfered with by the large offerings of deciduous fruit. There is a fair business in lemons, but nothing extra for this time of year.

Oranges: Navels, box	$ 1.25@ 2.50
Valencias, box	1.75@ 2.50
Med. Sweets, box	1.00@ 1.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.00@ 2.50
Lemons, box	2.75@ 5.50
Limes, case	4.00@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

It is expected that a definite range of prices on almonds will be established within a few weeks. Meanwhile values are nominal on the basis of some early sales, and apparently higher than the trade is willing to pay, though the Eastern market appears to be in good shape. There is nothing new in walnuts, no domestic stock being offered.

Almonds, 1914 crop:	
Nonpareils	17 c
I X L	16 c
Ne Plus Ultra	15 c
Drakes	13 c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

The demand for the better grades is picking up a little locally, and values are well maintained, though supplies are ample for all current needs.

Comb: White	13 @14 c
Amber	10 @11 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

There is nothing new in this line, values being steady, with a ready demand for all offerings that have appeared so far.

Light	31 @32½c
Dark	30 c

HOPS.

Some sales of new hops have been closed lately in the Sonoma district at 14c, but trading is not very active as yet, and there seems to be no business at the top quotations, though many expect to sell for those figures. Labor trouble is apparently expected in the Sacramento fields, and may affect the output.

1913 crop	15 @17½c
1914 crop	14 @15½c

Live Stock.

There is little new in the situation, the local demand being rather light, with prices steady at about the old level. A few more hogs are coming in, and the current local demand for sheep and cattle is amply supplied.

Steers: No. 1	7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5¾@ 6 c
Bulls and Stags	3½@ 4½c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¾@ 9 c
100 to 150 lbs	8½@ 8¾c
Prime Wethers	5¾@ 6 c
Ewes	4¾@ 5¼c
Milk Lambs	7 @ 7½c

DRESSED MEATS.

Steers	10½@11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	11½@12½c
Ewes	11 @11½c
Suckling Lambs	14½@15 c
Dressed Hogs	13½@14 c

WOOL.

The fall clip has started in some parts of the San Joaquin, but there is not much offered yet, and no sales have been reported. Values, however, remain nominally as before.

Spring clip:	
San Joaquin	12@14c
Humboldt and Northern	16@21c
Calaveras	14@18c
Fall clip:	
San Joaquin	7@ 9c

HIDES.

The local market continues rather bare of supplies, the limited offerings being taken about as fast as they appear, though there is said to be no heavy demand, and values are hardly as firm as they were some time ago. Current prices, however, are still pretty well up to the old quotations.

HIDES.

Heavy Steers, over 56 lbs.	15 @15½c
Medium	15 @15½c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb.	15 @15½c
Light Cows, 30 to 50 lb.	14½@15 c
Kip	15½@16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	25½@26½c
Dry Kip, 10 to 15	24½@25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

Some good medium-weight stock has arrived here within the last week and found fairly good sale within the general range quoted. The sale, however, brought out no evidence of a strong local demand, and nothing is reported as now due to arrive. Most of the buying at present, it is said, is being done in the country.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

Special Deciduous Market Reports.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., July 21, 1914.

During the past week practically all markets have shown a more active demand, especially on peaches and plums, than any time since the early part of the season. Satisfactory prices have ruled on all varieties arriving in good condition.

The heavy movement of pears from the Sacramento river is over. Growers are now busy filling their cannery contracts, which call for some 5,000 tons, or practically 250 cars of shipping pears. The Placer county shipment of pears is at its height, and the rush of Bartletts will be over, with the exception of mountain districts, within the next week.

Although there was a god crop of Elbertas in the lower San Joaquin valley, about 50% were shipped East, buyers not caring to assume the same risk that brought them disastrous prices last year.

The Elberta shipment is now at its height in Placer county and should clean up by the 28th. This is also true of late plums, Giant, Hungarian, and Gross, so that by August 20 all varieties of peaches and plums from nearly every section should be out of the market and there will be nothing left to ship but grapes.

Malagas from Fresno will begin to appear on the market in small lots and cars to be shipped in full loads about the first of next week. Tokays should begin to move from Florin and Lodi districts between August 15 and 20. The warm weather of last week has to a certain extent wiped out the mildew, but some districts are complaining of sunburn.

Reports from the East indicate that Georgia will ship 3000 cars of pears, of which practically 2000 have already been marketed. West Virginia will begin to ship peaches about August 1, and their tonnage is estimated at 2500 cars. Maryland and New Jersey also report heavy crops, and by the middle of August the market should be flooded with Eastern peaches. Utah reports a good crop, but will not be ready for shipment until the latter part of August or first of September. Some sections of Colorado are now shipping peaches, as is also the Northwest.

A report from Spain this morning estimates the export of Almeria grapes to the United States for this season at 1,000,000 barrels. This is approximately 400,000 in excess of last season's shipments. Although a large percentage of these grapes are stored for the winter and spring months, they are shipped from the Atlantic seaports to every market in the United States and Canada and in a measure affect our Tokays and Malagas.

It is too early to predict the market for California grapes until some of the Eastern grapes are out of the way and conditions become more settled.

The markets for the past week ranged as follows:

New York—Wickson, $1.44 to $1.55; Tragedy, $1.15 to $1.55; Bartletts, $1.54 to $2; hf. bxs. Bartletts, $1.30 to $1.65; St. John, 55c to $1.10; Santa Rosa, $1.15 to $1.65; Burbanks, 93c to $1.35; Climax, $1 to $1.25; Hales, 55 to 90c; G. Duke, $1 to $1.40; P. Duane, 75 to 80c; Abundance, 65c; Sugar, $1 to $1.25; Ogons, $1 to $1.75; Botan, 75c; Cal Red, $1.10 to $1.50; German, $1.35 to $1.40; Washington, 77c; Simoni, 80c; Crawford, 80c to $1.16; Diamonds, $1.20 to $1.60; Thompson Seedless, $2.60; Bradshaw, 80c to $1.17.

Chicago—Wickson, 90c to $1.05; Tragedy, $1 to $1.80; Bartletts, $2.10 to $2.15; St. John, 85c to $1.08; Santa Rosa, $1; Burbanks, 90c to $1.25; Climax, 77c to $1; Hales, 87c to $1.25; Hinori, $1.35; Norman, 60c; Abundance, 74c; Sugar, $1.18; Ogons, 60 to 80c; Botan, 75c; Cal. Red, 92c; German, $1.35 to $1.40; Simoni, 75c; Crawford, 65 to 76c; Tuscans, $1.70; Diamonds, $1.40 to $1.70; Thompson Seedless, $1.10 to $3.40; Malagas, $1.78; Bradshaw, 93c.

Minneapolis—Wickson, 80c to $1.30; Tragedy, $1.15 to $1.60; Bartletts, $2.40 to $3.10; St. John, 55c to $1.50; Santa Rosa, 80c to $1.10; Burbanks 65c to $1.10; Climax 55 to 95c; Hales 65c to $1.05; P. Duane, 65 to 90c; Ogons, 65 to 75c; Botan, 65c; Satsuma, 85c to $1.10; German, $1.50 to $1.70; Washington, 65 to 70c; Simoni, 80c; Crawford, 95c to $1.50; Tuscans, 50c to $1; Diamonds, $1.70 to $1.80; Bradshaw, 80 to 85c; Red Astrachan, 95c; Red June, 65 to 80c.

Boston—Wickson, 55c to $1.75; Tragedy, $1 to $1.65; Bartletts, $2.50 to $3.75; St. John, 55c to $1.60; Santa Rosa, 65c to $1.25; Burbanks, 50c to $1.55; Climax, 50c to $1.30; Hales, 80c to $1.55; Hinori, $1.30; P. Duane, 70c to $1; Comet, $1.25 to $1.45; Sugar, 70 to 75c; Ogons, 65c to $1; Satsuma, 75 to 90c; Washington, 60c; Crawford, 60c to $1.40; Diamonds, $1 to $1.30; Bradshaw, 75 to 85c; Red Astrachan, $1.25.

Philadelphia — Wickson, $1.20 to $1.50; Tragedy, $1.05 to $1.40; Bartletts, $2.40 to $2.55; Burbanks, $1.25 to $1.30; Hinori, $1.25 to $1.45; P. Duane, 65c to $1.10; Eureka, $1; Sugar, 95c to $1; German, $1.15 to $1.30.

The total shipments for this season to date have been 3774¼ carloads, as against 2895½ carloads at the same date last year.

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PUBLISHER'S DEPARTMENT.

Regarding that latest work of Professor Wickson, "One Thousand Questions in California Agriculture Answered," the Daily Sentinel of Hanford says: "It is found to be most interesting, accurate, and reliable, as well as valuable, dealing as it does with every phase of agriculture, horticulture and live stock; setting the reader straight on thousands of subjects he may be in doubt about." Subscribers who have not yet obtained a copy should write for our special offer on this book. To non-subscribers the price of the book is $1.50 postpaid.

Readers who anticipate buying farm implements would do well to turn over the pages of a few of the recent issues of the RURAL PRESS and note the artistic announcements of the Newell-Matthews Co., of Los Angeles. In farm implements and equipment this firm would appear to carry as full and diversified a line as could be wished. After advertising almost everything from a plow to a cream separator, this issue carries their ad. of the Little Giant Potato Digger and offers free a "unique watch fob" to those interested in potato culture who will write them for details of this machine.

The number of new subscribers entered on our mailing list to receive this issue totals 181. This is keeping well up to what we can expect during the hot months, but wait until the cool times arrive to see us grow.

"De man dat don't trust anybody," said Uncle Eben, "is might liable to figure out moral responsibility in a way dat'll prevent anybody f'um trustin' him."—Washington Star.

NOTICE OF REMOVAL OF PRINCIPAL PLACE OF BUSINESS.

Pursuant to the written consent of the holders of more than two-thirds of the capital stock of Roberts Brothers Company, a corporation created and existing under the laws of the State of California, which consent was duly filed in the office of said corporation at the Sheldon Building, First and Market streets, in the City and County of San Francisco, State of California, on the 6th day of July, A. D. 1914; and pursuant to a resolution of the Board of Directors of said corporation, which resolution was duly adopted at a meeting of said Board of Directors, duly called and held at said office of said corporation on the 6th day of July, A. D. 1914, at which meeting a quorum of the directors of said corporation were present and acting:

Notice is hereby given that the principal place of business of said corporation will, on the 1st day of August, A. D. 1914, be changed and removed from said City and County of San Francisco, to the City of Oakland, County of Alameda, State of California, on and after which date the principal place of business of said corporation will be said City of Oakland, at No. 465 Fifty-ninth Street.

This notice is published by order of the Board of Directors of said Roberts Brothers Company.

Dated at the City and County of San Francisco, July 6th, A. D. 1914.

DELOSE ROBERTS,
Secretary of Roberts Brothers Company.

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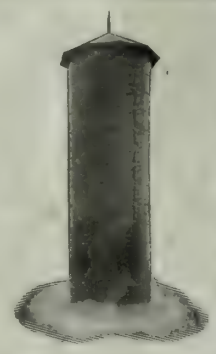

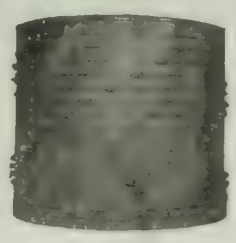

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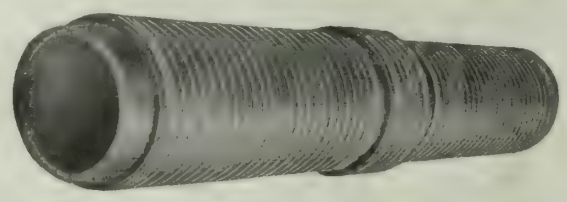

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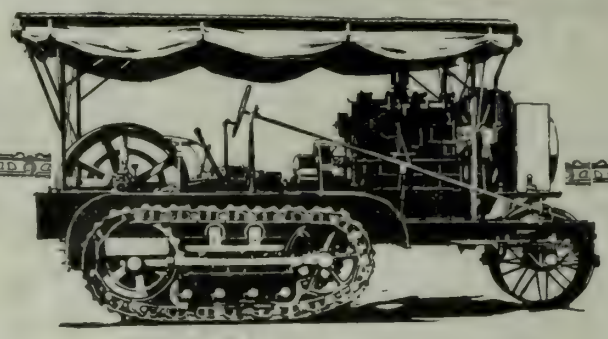

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THE PACIFIC RURAL PRESS

Vol. LXXXVIII. No. 5. SAN FRANCISCO, SATURDAY, AUGUST 1, 1914. Forty-Fo[illegible] [illegible]ar.

State Library 7-1-16

Livestock Specialization on Two Acres.

[Written for the Pacific Rural Press.]

Four years ago J. M. Gondring was endeavoring to practice law in San Jose and at the same time raise a large family of boys and girls in such a manner that they would make good citizens in the future.

The job was a hard one, as he was getting along in years and was further handicapped with poor health. The first change from the old life was made through the purchase of a herd of 32 cows, from a farmer near Ceres, Stanislaus county, leasing the alfalfa ranch on which they were located and going into the dairy business.

The lease on the land was for three years, but when the first year's work was finished, the owner of the ranch had a chance to sell it; and by that time Mr. Gondring had found it impossible for him, with his poor health, to continue dairying in that location, without employing hired help to do a large part of the work, if his boys were to secure the education which he hoped to give them.

Did he give up the idea of dairying? Not Mr. Gondring. Instead, he picked 10 of the best cows, not on appearance alone, but by the aid of the milk scales and Babcock tester, and bought two acres right at the edge of the town of Ceres.

That was two years ago. Now he is milking 20 cows, has nine or ten head of young heifers coming on all of the time, keeps enough hogs to consume what skim milk is not fed to the calves, has a nice lot of chickens, and keeps a team of horses and a mule. Besides all this, he is sending two of the boys to the Ceres high school, which is about five minutes walk from the home. He has also furnished a home for one of the other boys, who has gone to work in a merchandise store, as well as for one of the girls who is now a teacher in the local school.

Gondring Believes Registered Jerseys Would Pay Better.

Enough Hogs are Kept to Consume the Skim Milk.

The Boys Haul Most of the Hay During Vacation.

What else has he done on two acres? Well he has regained his health, has a modern six room bungalow for a home, and is making a comfortable living, does most of his work in a few hours, night and morning; and has a large part of the day to devote to reading or other pastimes as he may see fit.

How he does it is nothing remarkable, one [illegible] get the scheme thoroughly worked into your head, for it is nothing more than specialization in dairying, in its highest form, or at least that is the way the thing will eventually work out; for Mr. Gondring is beginning to realize that he has opportunities of making money that did not at at first present themselves.

For instance, he is finding that he has a big demand for calves and pigs, and that his yearly income from breeding stock alone would make a comfortable living for him if he had purebred hogs and cows, instead of the grades which he now owns. Then, too, he has been offered a premium of several cents a pound for his butterfat, provided he would spare a little of his leisure time each day for the more careful handling of his milk. In fact, Mr. Gondring says that there seems to be no limit to the possibilities of his revenues, which are popping up here and there, at different times.

Theory and practice seem to have made a good team, for while the "kids" and health had a lot to do with the start being made on the two-acre piece of land, it was also figured out beforehand that a given number of cows could not be so profitably handled on a ranch, where a large part of the day's work consisted of general farm work, as where all of one's time could be given to the cows and dairy work. Then, too, there was some doubt in Mr. Gondring's mind whether, after all, interest on $350 to $400 an acre alfalfa land, together with State, county, and irrigation taxes, fertilization, irrigation, etc., didn't make the cost of hay run up to an average cost of about what the selling price has been in that district for the past few years.

The theory of the thing that by having the ready cash at all times to pay for feed, other farmers with no stock to feed would be willing to give him the pick of their crop, at a lower price, rather than to take another buyer's note for 60 or 90 days, which seemed to be customary where good prices were received.

Last year was, of course, a year of exceptionally high hay prices all over the State, and the section around Ceres was no exception; yet Mr. Gondring found that by having the cash, his hay cost him only about $8 a ton. Of course this was not all purchased in one lot;

(*Continued on Page 111.*)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

ONE DOLLAR PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS CO., - PUBLISHERS

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., July 28, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date*	Normal to Date.	Maximum.	Minimum.
Eureka	.00	T	.11	62	46
Red Bluff	.00	.00	.00	98	62
Sacramento	.00	.02	.00	94	52
S. Francisco	.00	.00	.01	64	52
San Jose	.00	00	.00	80	52
Fresno	.00	T	.00	104	60
Independ'ce	.00	.06	.00	92	52
SanL.Obispo	.00	.00	.01	78	52
Los Angeles	.00	.01	.00	76	56
San Diego	.00	.00	.00	70	60

T. means trace.

The Week.

There will be no summer vacation for the international peace movements this year. Although they did succeed in mediating Mexico in time to have the dog days on this hemisphere for a siesta of their own, on the other side of the water the dogs of war, insisting on the old proverb that every dog has his day, are yapping and leaping at their leashes in a way that is quite fierce. That the soothing potations of the peace societies can be administered in time to avert an outbreak seems at this moment rather doubtful and the peace prescriptions just issued to the nations of the earth by our government are being rejected as ill-suited to acute attacks, though they may alleviate the chronic disease of war. When some one asked President Wilson the other day if he did not intend to intermediate between Austria and Servia, he wisely replied: "It is the traditional policy of this nation not to interfere in European affairs." The prospect of pacification in Mexico surely entitles the President to take a little peace himself. But this country will be in the issue in various ways. Two steamers from New York took more than twenty millions in gold to Europe this week and much more is going. No war can be made without money. Two armored cruisers recently sold by the United States to Greece may be in the war on the Servian side and one of them will exchange its name "California" for the title of some Homeric hero, perhaps. But this bit of trade will not exclude California from the category of war, for the name will be emblazoned upon a grander craft—a super-dreadnaught, which will be constructed in the bay of San Francisco. And so we shall share in the general inconsistency of war: while profoundly desiring peace throughout the world, if there is to be a scrap we fondly hope to be in the best of it.

More Millions in the Same Old Way.

It does certainly sound respectable to speak of millions of American gold going abroad to make European war with, even though we ought to be shipping olive branches and peace poultry instead of double-eagles whose voice is still for war. As, however, the colossal waste of millions in war gives our peace champions such bad spells, we will speak now of other millions which pride themselves in being beneficent in that they are being put forth as a national tribute to the farming industry. Word comes from Washington that the Secretary of the Treasury will lend out of the national strong box, "thirty-four millions and as much more as may be necessary, to facilitate the movement of crops and promote business generally." The administration has claimed that there is nothing the matter with business except in the head of the business man, but probably the best way generally to cure the head of a man is to put money in his pocket. And so the Secretary of the Treasury will put thirty-four millions in the banks of the Central West and South. The terms upon which this money is furnished are described as follows: "Interest at the rate of 2 per cent per annum will be charged, and the Government will accept as security Government bonds at par; state, municipal, railroad and other bonds, acceptable to the Secretary, at 70 per cent of their par value; approved commercial paper, acceptable to the Secretary at 75 per cent of its face value." And the placing of the money will be in this wise: "In apportioning the funds among the banks in each city consideration will be given the character of business done by the applicant bank and the extent to which it is lending money to its country correspondent banks."

The point to which we call attention is the fact that this money is loaned only to the banks, and we presume that as things now are it could only be loaned to banks, so we are not complaining of that. And when those banks get this money at 2 per cent per annum they will loan it out just like other money at 6 per cent upward—for whoever heard of less than that in the country, where Uncle Sam is anxious to have this money go, or else he would not give it to a bank, "according to the extent to which it is lending to country correspondents." And so the man who wishes to "move a crop" (or "gamble in a crop," for that is probably what is meant by "promote business generally") can get Uncle Sam's money just the same as Deacon Smith's money or any other money which happens to be in bank at that time. The bank however, may be paying Deacon Smith 4 per cent—so Uncle Sam only gets 2 per cent, or one-half what his money is worth, while the borrower does not get it any the less because of his uncle's sacrifice. Now in this wonderful absorptive power which the bank has for Uncle Sam's beneficence, we are not complaining of the bank. That is the way to do banking for the benefit of the stockholders, and if we owned any bank stock we should insist, probably, on having it done that way. But to have an idea that such a way to furnish money is beneficent to agriculture is to hug a delusion. The only thing it can possible do is to block the game of money-pinchers, who are apt to claim that there is no money when it is most needed. But really the way the Government aid is administered on the claim of assistance to farmers would make Europeans laugh.

Well, whose fault is it? It is the fault of the farmers. If they do not care for money at lower rates of interest—no one is at fault. If they do care for it and need it in their business they can get it by organizing for it. If they will make only a little noise about it, Congress will pass all the laws necessary for organizing farmers' national banks, and if they organize, as they have in practically all European countries, they can accumulate the securities necessary as collateral for Government 2 per cent money just as easily as the existing national banks do. But so far as we see and hear, farmers and their organizations do not care enough about it to speak of, and so the millions keep going in the same old way.

Pacific Coast Prosperity.

In the distribution of this 2 per cent money from the national treasury, none will come to the Pacific Coast, because the bankers of this coast did not care for it. Banks all the way from Los Angeles to Tacoma "expressed the opinion that no Government deposits will be needed in their localities during the crop moving season." This, of course, is true from their point of view. There is quite enough money, we presume, to meet the demand at ruling rates, which is the way the Government money is traded in, and there might be also enough for larger loans if borrowers were properly organized for it. In this respect this coast is in rather better shape than some other parts of the country. I. W. Hellman, one of our great bankers, just returning from recreation and observation abroad, tells an interviewer these things: "The financial conditions in Europe are somewhat strained, and the same is true of the eastern part of the United States. I do not think that any part of Europe or America has better prospects than we have right here in California. We cannot expect a great change for the better until the new crops are harvested and sold. I heard much favorable comment in Europe as well as in New York concerning out large grain and fruit crops. These, naturally, will bring a great deal of money into California, money that will be a big help to us." This will be a comfort to all who like to look on the bright side of things. When crops are sold and money in, and when Mt. Lassen and the politicians cease their eruptions, and the disturbing amendments are disposed of, good times will return and we will all take a sky-flight into the empyrean of the exposition year.

An Intensive Affair.

We make a contribution on the first page of this issue to the literature of small farming, which we imagine will appeal strongly to the imaginations of real estate agents and subdivision promoters, and we shall be surprised if it does not emerge from their transmutation processes into a glowing image of the capability of a two-acre farm. They will, of course, neglect to state that all that stock is fed upon forage grown on other land. Such a little detail as that, is, of course, easily overlooked. It will also be easy to forget that nothing but the highest kind of business ability involving systematic planning and computation and the dis-

covery of exceptionally good selling avenues, could succeed in pulling such an enterprise through. This two-acre farm is a manufacturing enterprise which uses this land to stand upon and draws its raw materials from elsewhere and moves out its products with much more regard for good buying and selling than ordinary farming exercises. Another important item is the home labor supply, of course, which changes out-go to income. This is a type of food production which must become more prevalent if present movements to shorten hours and increase wages should succeed. As some of our correspondents have intimated, as hired labor becomes more exacting, less of it will be used, for the farmer must do everything he can to dispense with that which does not contribute to the income of his business. Other correspondents figure that all you have to do to force a farmer to hire more men is to make it impossible for him to handle a crop with the help he usually employs. This is of course ridiculous; the first thing he will do will be to drop the crop, put the land to grazing and do his own cow-punching. But never mind that now; what we desired to do was to call the attention of our promoting friends to what can be done on a two-acre California farm!

How Long Do Californians Work?

As there are so many wild statements in circulation intending to create the impression that California working men are unreasonably worked and need rescue by an unreasonable law, it is well to have authoritative figures to use in discussions of the subject. Arthur Dunn, secretary of the Farmers' Protective League, has compiled from the report of the State Labor Bureau, which need not be suspected of having any employers' bias, the fact that the bureau investigated the hours of labor of 145,154 male wage workers and found the average employment to be as follows:

1,675 or 1.5 per cent worked 12 hours.
950 or 0.9 per cent worked 11 hours.
18,115 or 16.8 per cent worked 10 hours.
46,627 or 43.2 per cent worked 9 hours.
39,532 or 36.6 per cent worked 8 hours.
1,051 or 1.0 per cent worked less than 8 hours.

This shows, it seems to us, that employers of California are not unreasonable in their requirements and that only when the nature of the employment requires longer hours are they expected, and this is recognized both by employers and their workmen. To break into this reasonable adjustment of things by an arbitrary eight-hour law is dangerous and uncalled for. If any one desires to arrive at a calm dispassionate view of the pending question let him study the above tabulation.

Queries and Replies.

Querists must submit full names and addresses.

Dead Spots on Lawns.

To the Editor: I have quite a piece of lawn sown to Kentucky blue grass. This year it does not look so well as usual. There comes in it a round, dead, yellow spot. This spot increases, finally recovering somewhat in the center. The dead yellow part becomes a yellow-like circumference of a large circle. These circles and spots occur in many places.—M. C., Los Altos.

Dead spots in lawns are probably due to a number of different causes—the work of grubs feeding upon the roots; the occurrence of masses of lime, plaster, etc., covered in after building operations; the evacuations of animals and probably other local causes may be productive of the death of the grass. Such an instance as you describe is interesting, because it seems to indicate the formation of a "fairy ring," which is noted in the pastures and meadows at the East and abroad. This is due to the start and progress of a fungus, Marasmius oreades. In course of its attack the center revives and the ring keeps axpanding as you describe, but we are not aware that this fungus has been detected in its work in this State.

As for treatment, the handling of dead spots of all kinds would be similar. Cut out a part of the sod somewhat larger than the spot, remove the earth to a spade's depth, fill in with fresh earth mixed with a reasonable amount of fertilizer, resow the spot and bring it along by frequent watering, cutting, etc., to a normal condition. This may seem to be a good deal of work, but a good lawn is always rather an expensive affair in California, and the consolation must be found in the fact that a well-kept lawn is so thoroughly beautiful and enjoyable.

Gumming in Almonds.

To the Editor: What is the cause of gum appearing in the kernel of almonds? What remedy is there?—J. W. R., Elk Grove.

Gum appears in the hull of the green almond, usually near the stem end, from the work of the larva of the peach moth, which sometimes approaches the kernel, but we presume you refer to the gumming inside the shell of the almond which transforms the kernel into an amber-colored substance and destroys it. This trouble seems to be like that of water core in the apple and of split pit of the peach, and no specific cause has been ascertained nor remedy demonstrated. It seems to be a physiological trouble quite difficult to understand.

A Fruit-Eating House Pest.

To the Editor: I am sending some small black bugs. While visiting a friend last evening these bugs came into the house, attracted by the light, and my friend states that the orchard is full of them; that they eat any fruit that is ripe and falls off the trees. What are they, and if they are harmful to the orchard, what is the best way to get rid of them?—W. P. M., Santa Clara.

The insect is Amara, one of the carabidae, a group of beetles which are omnivorous and apt to occur in large numbers as you have noted. It has no standing as an orchard pest, and therefore need not receive serious attention. So far, at least, it has only been found helping itself to fallen fruit and you probably will not experience any trouble from it, except that its flight to the house lights makes them disagreeable intruders. They can be caught in light-traps—a light over a pan of water with a film of kerosene on the surface; or a little bonfire may draw them to destruction.

But though disagreeable as night-fliers to the house lights, Dr. E. C. Van Dyke, of the University Experiment Station, thinks they might be winked at for the good they do. He writes us: "The beetles are Amara conflata. The species of the genus are often called "sun beetles." They are predaceous normally, though they do take a certain amount of vegetable food as pollen, small fungi, and the tender young shoots of grain and grasses, the great good that they do in the way of keeping down the insect pests that are to be found in the garden and field will, however, more than balance their little injury."

Why Monkey With the Tariff?

To the Editor: If the tariff has no effects on imports or prices of farm products, why change it: why raise it or lower it?—H. S. E., Princeton.

We do not believe that the tariff has no effect on imports or prices. It may produce all kinds of effects, according to other economic conditions prevailing, and it may produce one effect at one time and another effect at another time. For example, it may raise the price of a protected article for a time and encourage local production of it, and this production may reach such extent and efficiency that the product can be sold for less than was previously paid for the imported article and still give the local producer a fair profit. This was the case with some of our protected California fruit products. Lowering the tariff may then lower the price, or it may not affect the price at once—if the importer thinks it better policy for him to add the duty to his profits instead of paying it to the government. If, however, he chooses to cut prices in competition, he can afford to do it, for he has cheaper labor, lower interest rates, and sometimes cheaper transportation, etc. Why propose to change the tariff when things are going well and producers prosperous? Because voters can be hoodwinked that way.

Melon Wilt.

To the Editor: What can I do for my melon patch? The ground was heavily manured three years ago and has grown only weeds until this year. I water with a hose and engine, but the melon vines, muskmelon and casabas, just die; wilt. First one plant died, but the next to die was 40 feet away on the farther side of the patch. I try to keep just the right amount of water on it. Beans and tomatoes adjoining with same care are thrifty. I never saw bigger tomatoes as a rule nor a heavier set of melons. Watermelons are all right so far, the melons big as one's head. I can find no gopher nor mole tracks nor cutworms.—H. B. E., Princeton.

You have given an excellent description of the mysterious disease known as "melon wilt" and what a man usually does when he encounters it. The cause is a bacterium which enters the plant from the soil and acts upon its interior tissues so as to produce collapse without external marks of trouble. It takes plants here and there and may not take many. It does not act therefore as does a spreading disease and it cannot be reached by external applications. Burn all plants which wilt, root and branch, and put your melons in a new place next year.

Yellow Jackets in a Tub.

To the Editor: How can I get rid of yellow jackets which have made an underground nest among the roots of a potted shrub.—S., San Francisco.

Plunge the pot in a tub of water so that the water can rise up and over the rim thereof and leave it for a few hours. If you have nothing large enough to hold the pot, cork up the drainage hole and fill earth and pot with a hose, leaving as before long enough to drown the jackets. Vapors generally used for ground insects might kill the shrub. You can poison the jackets by taking a piece of beefsteak and sprinkling it well with arsenic—but then you might get the cat.

The Almond in California.

[From the address of G. W. PIERCE, at the Fruit Growers Convention at the University Farm.]

The almond is supposed to have found its way into California from Europe about 1853. It came to us after long centuries of existence, with many of the imperfections that characterized its early career. To a Californian, Mr. A. T. Hatch of Suisun, is given the credit of first having undertaken the improvement of the almond along scientific lines. So marked were the results obtained by Mr. Hatch, that the leading commercial varieties of almonds grown in California today are designated as the Hatch varieties. Chief among these are the Nonpareil, the I. X. L. and the Ne Plus Ultra. The first two are the leading and highest priced almonds produced in California at this time.

While Mr. Hatch greatly improved the quality of the almond the varieties originated by him, when planted in the orchard, in solid blocks of a single variety, rarely give a satisfactory yield.

The quality of the product was improved at the expense of the output. To obtain cross-pollination and increased yield it has been found to be good practice to alternate the Hatch varieties with some hardier almond. Years ago hard shelled almonds were used for this purpose, but now the Texas Prolific, Drake's Seedling or other soft shelled varieties are generally used because of their higher market value. Usually two rows of the soft shelled varieties alternate with four rows of the Hatch varieties. Planting in this manner is advised to facilitate gathering which will later be explained. The rows should run, as far as may be, at right angles to prevailing winds at the time of blooming, viz: if the prevailing winds are from either the north or the south, run the rows by varieties, east and west. This matter should be given the closest attention.

VARIETIES.—No general rule can be given for the distribution of the several varieties of almonds, that will apply to all sections. Experience is the only safe guide as to what varieties should be planted in any given locality. For instance, the I. X. L., an extremely shy bearer in many localities, excels all other varieties in certain localities where conditions of soil and climate meet the requirements of that variety. When you plant, plant for profit. Before deciding what to plant, find out what varieties have done best in your immediate vicinity, or experiment in a small way until you know what to plant. Neglect to follow this rule has caused great loss to individual almond growers in California and has been responsible for much demoralization in the industry.

OUTPUT.—The annual average output of almonds from California, for the last 15 years is about 2000 tons. It has run from 450 tons in 1898 to 3300 tons in 1910. The crop of 1913, owing to drought and frost, was but 1150 tons.

During recent years, the importation of almonds from Europe has amounted to about 8000 tons annually. Of this quantity, Spain supplies 50 per cent, France 25 per cent, and Italy 25 per cent. It will be noted that imports are four times as great as our output. Many new orchards in California, not yet in bearing, will soon materially change this ratio.

During 1913, the per capita consumption of almonds in the United States, amounted to but one pound for each five people. In other words, if one in five of our population ate one pound of almonds each of the remaining four, would, like Mother Hubbard's dog, find the cupboard bare.

REQUIREMENTS.—The almond, because of its extremely early blooming period, is the most susceptible to frost of any orchard tree of general cultivation. It is best adapted to a light sandy soil, or a grade of land not far removed from a sandy loam. Heavy rains at the blooming period, especially if the weather be cold, are disastrous to the almond. The tree is a most profuse bloomer, but previous to pollination, at the blooming period, requires mild weather to insure best results. After pollination has taken place, but while the bloom is still on the tree, heavy rains frequently occur without serious damage to the crop.

No soil, not well drained, will produce almonds successfully. Numerous instances are a matter of record where almond trees have been planted on soil apparently adapted to the tree yet where the waterplane during the winter months, stood within four to six feet of the surface, and the tree has died.

Almonds will not do well in a section where there are frequent and heavy fogs. As a rule, they will not produce well when planted on low ground, as they will be more subjected to the frost there than at a slightly elevated location.

From the foregoing, it is evident that the productive area of almond culture is limited. The requirements are exacting. Only a few sections can qualify. To the prospective almond grower, I would say make haste slowly. Look well to the soil and climatic conditions of the section in which you propose to plant. Upon a rare combination of these two largely depends the success of the undertaking. No matter what the character of the soil may be, if frequent and late frosts prevail almonds cannot be grown. You may be able to grow a tree of goodly proportions, it may even be beautiful at the blooming period, but it will be a financial failure.

PLANTING.—The almond, being a long-lived tree that attains large proportions, needs more space than the average deciduous orchard tree. It requires a large area from which to draw nourishment and obtain sunlight. Its wide expanding limbs should not interlock with its neighbors. Early orchardists in California, planted almond trees from 16 to 20 feet apart. Many of these, later dug out every other tree. Many who did not do this, finally dug them all out. It is best not to plant the trees less than 25 feet apart. Some of the wide-spreading varieties should not be less than 28 or 30 feet apart. There are two methods of planting. The one largely used is where the trees are equally distant in the rows and between the rows; its chief disadvantage is a large open space between each series of four trees. Another, and more equitable one so far as the trees themselves are concerned, is the equilateral triangle method. In this, the trees are equally distant from each other in the several directions. The chief objection to this method is that cultivation is somewhat hampered.

Before planting have the ground well plowed, harrowed and free from large clods. Do deep plowing and break up any hard pan that may be there as a result of previous shallow

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Francis V.

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Republican Candidate for

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On the subject of the universal eight-hour law, a vital issue before the agricultural, viticultural and orchard interests of California, Francis V. Keesling says:

"Wherever a law limiting the hours of labor to eight can be enforced to the betterment rather than the injury of the men, women and industries affected, then it should apply. I am unalterably opposed to the universal eight-hour law to be submitted by initiative petition.

"It will not only work tremendous injury to the people it is designed to serve—the laboring men and women—but it will virtually destroy the great agricultural, viticultural and orchard interests of California, now burdened to the breaking point with excessive taxation and the penalties of ill-considered laws enacted at the behest of demagogues."

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plowing. You cannot do this after planting. It is most essential that this be done to induce roots to seek permanent moisture below.

Be generous with the trees in the matter of digging holes. Dig a hole large enough to give the spreading roots ample room to straighten out. Dig deep enough so that you can put some fine surface earth in the bottom of the hole to bring the tree up to about the height it stood in the nursery. Fill the hole at least half full of well-pulverized surface earth before returning any soil taken from the hole.

Too much care cannot be given to the nursery stock you plant. Get the best stock obtainable. A tree that has been neglected, or badly handled in the nursery will prove poor property. One cannot afford to accept such a tree as a gift. Get good healthy stock, but do not imagine you must get a tree full grown. A tree of medium growth is better for planting. Look well to the roots of the nursery stock, they are the dividend payers. If they are numerous and healthy, you can grow a top cheaper than you can buy it. As the very existence of the tree, not to mention its productivity, depends chiefly on its root system, that system should be as near perfect as it is possible to realize. Almond nursery stock is usually on almond root, and in most instances it is the best. It gives a hardy, long-lived tree with a great net work of roots, some of which penetrate the soil to considerable depths in search of moisture. Almonds on peach root are shorter lived and require more moisture.

Frequently the roots are bruised or broken in digging. These damaged roots should be cut off. The remaining ones should be spread out in the hole in such a way, that when they grow, the tree will receive sustenance and support from all directions. In cutting the roots cut in a slanting direction from the under side of the root so that the freshly cut part may rest on moist soil. It is well to dip the roots in thin mud at time of planting to exclude air and assist in starting growth. If the soil be dry, at time of planting, five or ten gallons of water thrown into the hole will greatly help the tree in beginning the struggle for existence under new and frequently trying conditions.

When the tree is planted cut the top off to within about 18 inches of the ground. Cut in a sloping direction, on the north side of the tree, to prevent exposure to the sun. Leave a bud near the top on the south side of the tree that early development may protect the wound. Shield the body of the tree from the blistering rays of the sun and the depredations of animals and insects. Specially prepared tree protectors can be obtained easily and cheaply in the market. If these be not available, paper, burlap, shakes or whitewash will, if installed in time, prove a good investment.

CULTIVATION.—Cultivate thoroughly to retain moisture in the soil as well as to destroy noxious weeds. A well pulverized soil surface for the summer months is a contribution to future success that you cannot afford to neglect. It retards the evaporation of moisture stored in the earth by winter rains, thus forming a reservoir to be drawn upon as needed. One must not lose sight of the fact that the period of annual growth and activity of the almond extends over the greater part of the year. If the tree is to have vigorous buds, from which to mature profitable crops, conditions must be such that the moisture nature intended for the trees shall be available at the proper time. In the wild state, in most instances, the tree finds sufficient moisture to maintain its existence. With the domestic tree, however, additional burdens are added. It must not only maintain its existence, but it must produce profitable crops. Co-operation between grower and tree is necessary to meet this additional burden. If opposed to co-operation, or if you cannot co-operate, you are not adapted to the business and had better not undertake it.

PRUNING.—Beginning with the second year, shape the tree for future usefulness. Start it low down as a matter of protection to the tree itself, to shade the ground, to prevent evaporation and for convenience in harvesting the crop at time of maturity of the tree.

Carefully train main branches so that nuts may be produced on all quarters of the tree. Do this carefully and later pruning will consist of an occasional thinning out only. Remove all water shoots or suckers. They rob the tree of much of its substance that should go to the crop.

TROUBLES.—The almond tree while perhaps as free from insect and other pests as any other cultivated tree, still has its troubles. Shot hole fungus sometimes appears. The ravages of this can be checked or lessened by spraying with Bordeaux mixture during the dormant period of the year, and at the beginning of blooming.

The peach moth is a worm that at times causes much damage to the almond crop, if neglected. Should it appear, treat it with a mixture of Paris green and lime in the proportion of about 1 to 20. Apply with dust-spraying apparatus.

Red spider is the most persistent insect pest of the almond tree. It is easily handled by spraying with sulphur. Any of the flowers of sulphur will prove effective. The "Anchor" and the "Rooster" brands are largely used and can be obtained readily. It is best to mix the sulphur with lime, as a carrying medium, in the proportion of 25 to 50 per cent sulphur.

If sulphur is to be applied at the same time that the peach moth needs attention, add Paris green to the sulphur and lime mixture and save one spraying. These suggestions have been made on the supposition that the average almond grower will use the dry rather than a liquid spray. The dry spray is much more economical in its application than is the wet. It is far less disagreeable for the operator and has generally proven itself effective when properly applied. For a dry spray use lime, 40 pounds, sulphur 5 pounds, and Bordeaux 3 pounds.

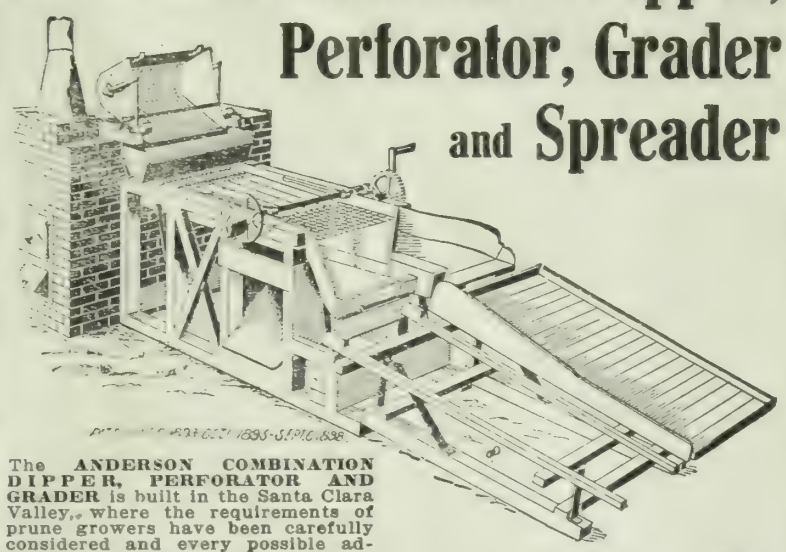
A home made mixing machine is easily constructed. Take any good heavy barrel. Bore a hole in the middle of each head and put a round shaft completely through the barrel leaving it project at each end far enough to give bearings on which to revolve. Put a crank on one end. Cut a door in the middle of barrel at point of greatest diameter and fix so that it can be tightly fastened. Put in materials and turn until all are thoroughly mixed.

The best way to apply the dust spray is with a specially prepared dust spraying machine. These are made in different sizes. The smaller ones are made to run by chain geared to a sprocket which is attached to a wagon wheel. The larger ones are run by gasoline power. Those geared to a wagon wheel are cheapest and easiest to operate. They are efficient and well adapted to the needs of the average grower. The first cost is moderate and any one having the least adaptability to machinery can run them. Add to this a man, a span of horses and a wagon and the equipment is complete. Having this, use it. The ingredients for the mixture cost but little. The ravages of the insects and other pests run into dollars very fast.

Use the dust spray early in the morning while the dew, if any, is on the foliage. Begin on the side of the orchard from which the wind, if any, is blowing. Drive along side each fourth row. The machine will blow the spray high into the air. In settling it will be distributed over the entire adjacent trees. Repeat this operation several times each season, going in different rows. It is best to select for spraying a morning when there is a dew and but little wind.

(To be Concluded.)

Anderson Combination Dipper, Perforator, Grader and Spreader



The **ANDERSON COMBINATION DIPPER, PERFORATOR AND GRADER** is built in the Santa Clara Valley, where the requirements of prune growers have been carefully considered and every possible advantage incorporated into the machine. Can be furnished with or without rinse tank. Made in various sizes for hand or power. We manufacture a full line of fruit handling machinery, including **trucks** and **cars**. Write for illustrated catalog which describes the entire line.

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1000 lbs. per acre once in each four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500%. At Maryland Ex. Station $1.96½ gave $22.11—over 1000%. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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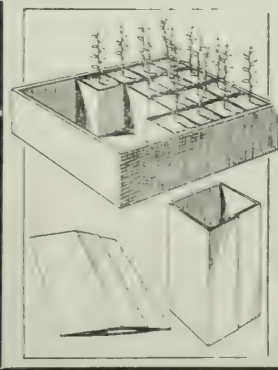

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For **Truck Gardeners,** for Early Melons, Tomatoes, Cabbage, etc., they are the thing.

Write for sample and price. We also Manufacture Perforated Tree Protectors. Over Three Million of them sold last season.

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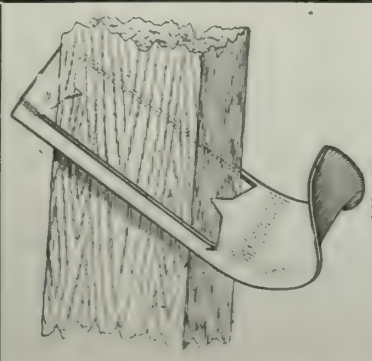

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ARE THE BEST MADE

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Sample and prices sent upon request.

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Riverside, California.

Why an 8-Hour Law Should Not Prevail.

To the Editor: Please allow me a few lines of space in your valuable paper, to ask H. Hillers a few questions in response to his article published in your issue of July 11, in reference to the much-discussed "eight-hour law." First, assuming that an "eight-hour law" goes into effect, how does Mr. Hillers figure on getting the extra shift of labor that the farmers and dairymen would require in order to get the work done?

Is Mr. Hillers aware of what is to be done on a farm and dairy? If not, I would suggest that he take a hand at the game, and I assure him that before the end of six months he would be fully convinced that it is not such an easy matter to solve as he predicted.

His argument about eight hours being enough work for any man or woman is right to a certain extent. A good man or a good woman will always work faithfully and never intrude in anyone else's affairs, and their work will always be done in time and tidiness. Where a good number of laborers are put to eight hours' work, it would require some one after them to see that they are there in time and keep them from shirking while on duty. Just as it would be with some of the mules he refers to which would not even pull the empty wagon, thus interfering with the few good mules that are willing to work.

I hate to have to write the requirements of a farm and of a dairy, for I know that most readers of the PACIFIC RURAL PRESS are fully aware of them, but for the benefit of those that are not acquainted with the conditions I will give the actual time that a man puts in according to my observation and experience.

A man with 6-horse team:

To take care of team in morning	1 hr. 30 m.
To get in field at work	30 m.
To come from field at noon	30 m.
To go out in field	30 m.
To come home	30 m.
To care for team in evening	1 hr.
Total	4 hr. 30 m.

Out of this you must allow at least 30 minutes per day for time that you must lose in order to make you sure not to infringe with the law.

Total time	5 hours
Time for actual work	3 hours
	8 hours

Now if Mr. Hillers knows of a way for a farmer to make ends meet, I would like to be shown, even though I am not from Missouri.

As to the cook: I will say that I have had a few of them during the last twenty-one years, and I have not yet found one that would accommodate my bunch of help to satisfaction in 8 hours—and I must say I had some good willing workers at that.

In regard to Mr. Hillers' idea that a working man is "less thought of than a mule, still if you treat him right he will work for your interest," I will say that there are some employers that do not use the men quite right. But I have seen workingmen that, no matter how well they are treated, or how much they are paid, are never satisfied and never take any interest for their employers in avoiding mischief. Although I have seen mules avoid stepping on small trees in the orchard and keep from stepping on the beet and bean rows of the poor farmer.

I have the best regard for all class of labor and I treat my men to the full length of my purse-string, and if Mr. Hillers will take time to inquire further he will find that as a rule the workingmen are much better treated today than they were some years ago. I do not think that by forcing too much law in the face of the employer will make it any better for the laboring man. Let us not forget to put an exhaust valve on the boiler and watch it carefully that it does not get corroded, for if we do the life of our employees will be in danger.

I do not know of anyone that runs any kind of business for glory, and I do not think many farmers or dairymen will ever put any more hardship on their wives and children to meet conditions than they are required to do today.

Now the dairy line—generally one man is required to milk 25 cows morning and evening. Some of these men are required between times to prepare feed for cows; some to care for calves; some to tend pigs, and some to do the cleaning up. Some also are to deliver the cream, some to separate the milk, some to go after and bring the cows from the field, and so forth. When the cows are in the flush of season it takes a good milker to do 8 cows per hour, and during the rainy and muddy weather, six is about the hourly average. Under the 8-hour law, some milkers would never even get their cows milked, let alone doing the chores. Of all this I am speaking from experience, not from theory. Why not let a man who is willing and in need, work? Otherwise why not make it a crime to have more than two children born to each family; then all babies will be on the same footing.

The law of today compels a father to support his wife and family, which is no more than right. But so far I have known of no law against raising a big family, which unfortunately as a rule falls upon the poorest class of people. Will Mr. Hillers enlighten us how a man can care for his family of seven children if he is not allowed to work any more than his neighbor, who has no one to support?

As a matter of fact, if Mr. Hillers would take time to inquire into the farmer's life he will find that the most prosperous are those that have good willing sons and daughters and a good wife all working in harmony and not figuring on taking in every moving picture show or going to every other enjoyment that is given from time to time. As a rule he will find that those farmers that have to depend entirely on hired help are not very successful, and they usually have the places where the laborers are not treated quite right; not that the employer desires to do so, but for the simple reason that a hired cook, in most cases, will not take time or care to prepare the right meals.

Then again, most laboring men do not like to be fed from a Japanese or a Chinese cook, and I do not blame them. But what are we farmers and dairymen to do? Will it ever be better under the "eight-hour law"? I, for one, hope we will never have a chance to try it out.

Guadalupe. F. C. RUSCONI.

POLITICS AND THE 8-HOUR LAW.

To the Editor: As I am a farmer I am also more or less interested in the proposed eight-hour bill. To my mind, the greatest questions confronting the American farmers are the economic problems and not matters of any political nature.

So long as the American people seek to benefit themselves through any political question they are doomed to utter disappointment. We as farmers must turn toward an economical change. In the first place, the American farmers are the only class of business men who will admit that they have not brains enough to handle and run their own business. That is why we submit to have our legs pulled by the middlemen. One of the principal things wrong with the farmers is ignorance. They work from early morn until late at night, taking no time for social or education advancement. The average farmer is almost in a state of slavery. Why not use our heads more and not do so much slavish work?

I say let the farmers organize for their mutual protection. Do away with the middlemen and have the easy money that the middlemen take. Then he could easily afford to work 8 hours per day and pay his men a living wage.

In the Lodi section this year the farmers got from 60 to 70 cents per crate for apricots; in the East they sold from $2.50 to $3 per crate. Tragedy prunes sold here for 90 cents; in the East they sold for $3 per crate. Dried prunes sell here from 4 to 6 cents per pound; in the East they sell from 12½ to 25 cents per pound. Every product we raise here sells on the same basis all the way through.

On our ranch in grape-picking time we never work more than 9½ hours per day, and our pickers pick more grapes than they pick on places who drive their men 11 hours per day.

Let the farmers forget for a time that there are any political parties in the United States and look at the great questions from an economic standpoint, and I believe that the farmer could then begin to live as American citizens should. For myself, I am heartily in favor of the 8-hour law.

There is something radically wrong with the farmers when the farm products of the United States last year were valued at six billion dollars and when that same product gets to the consumer they paid thirteen billion dollars, an increase of 116⅔ per cent.

There evidently is something rotten with our present system of doing business. Give the farmer more time for study and thought along the great questions confronting him and I believe he would strive to better his condition. Why should the farmers, the producers of the world, work longer than eight hours?

Instead of the eight-hour law taking away the farmer's independence, it will give him time to assert his independence and to enjoy the society of his wife and family a little each day.

As other subscribers have expressed themselves through the PACIFIC RURAL PRESS, I wish you would please publish these views. SUBSCRIBER.

Lockeford.

[We do not see how farmers can secure the facilities for solving the economic problems mentioned by our correspondent without paying attention to politics. Existing laws must be modified and new laws must be enacted to enforce sound economic policies in our public affairs. Laws are made by those elected to make them: representatives are elected by vote: arrangements for voting, and nominating candidates to be voted for, are in the field of politics. Instead of the farmer having less to do with politics, he needs to have much more to do with them.—EDITOR.]

CLEAN DRIED-FRUIT STORAGE.

[Written for the PACIFIC RURAL PRESS.]

Were it not for disgusting Eastern readers with California dried fruit, we would like to publish descriptions of some of the dirty, dark, vermin-infested, chicken- and dog-accessible corners in barns where dried fruit is so commonly stored, often where the hired man must climb over them in his daily duties about the barn.

S. L. Wattles, of Healdsburg, has experienced the financial advantage of putting up a separate building for his 100-ton crop of prunes three years ago. He says that the tight tongue-and-grooved floor and sides, the tight roof, the aisles between bins, the windows to be opened for ventilation, have paid big returns in preventing the spoiling of fruit, besides its attractiveness to buyers and satisfaction to himself.

A similar house keeps F. C. Willson's apricots clean, for it is thoroughly scrubbed out before fruit is put in, and everything is tight and clean. Let's hope that Exposition visitors will see more of such and fewer of the other kind, as they visit the ranches of the State.

IRRIGATION AFTER FRUIT.

[Written for the PACIFIC RURAL PRESS.]

Some of C. E. Trapp's neighbors in Los Angeles county have peach trees that bear well only in alternate years. Since Mr. Trapp's two acres bear heavily every year, some of these neighbors have bought budwood from him, thinking their variety was weak. But these buds also bear only on alternate years so Mr. Trapp thinks the regular bearing of his trees is due to the irrigation he gives them right after the fruit is off. It enables them to grow strong fruit buds before fall so they are ready to bloom and stick fruit next season, too. Some folks think the year's work is done when the harvest is over, but Mr. Trapp thinks it is just begun, for the tree needs and gets special care during its recuperating period.

GRAIN IMPORTS AND PROTECTION.

An analytical note in the letter of J. G. Biller published July 18 on page 61, was intended to be parenthesized and sponsored by the editor instead of being left as if written by Mr. Biller. It reads, "Corn imports increased 1000%; oats and wheat, protected, increased less than 300%." Mr. Biller did not write that sentence and it was not intended to make it appear as though he did.—EDITOR.]

To Sell the Oranges of the Future.

[Written for the PACIFIC RURAL PRESS.]

"Thousands of acres of oranges will come into bearing within a few years in California. What is being done to take care of the increased crop?" was asked of a number of California Fruit Growers' Exchange men in different cities.

"Twenty years ago there were 5000 carloads of oranges, and folks were wondering how the crops from the greatly increased acreage might be marketed. Fifteen years ago California shippers were asking what was to be done with the 25,000 cars which were in sight within a few years. The Exchange said they would market it. This year the crop is over 43,000 cars and we are marketing it quite satisfactorily—it is a little harder job this year because the consumers remember the dry, pithy or bitter oranges from California that followed the freeze of 1913, and the sour ones with which they are struck early each season," says one.

"It is up to the growers' associations to sustain the reputation the Exchange is making by its advertising. Honest packs put up so the fruit won't mold are a necessity in the future if California is to compete with Florida. You must improve your picking and packing," says another.

"We are spending $200,000 in direct advertising through our advertising department this year. It is the most profitable investment, and the most cordially supported by the growers, of any money we spend," says another Exchange man.

"We are advertising in the biggest newspapers from Seattle to Maine for nine months in the year and we advertise in the Saturday Evening Post. The highest-grade of fruit of each association is sold under a copyrighted brand which is the property of the central Exchange and which we are pushing in the ads. The second grade also is packed under an advertised brand. The local associations must use their own brands in addition, if they wish to use the advertised general brands. By controlling the use of the two advertised labels, the Exchange is in position to make rules and regulations governing the grading and packing of the fruit sold under them. These general brands are "Sunkist" and "Red Ball."

"The central Exchange furnishes facilities for the distribution and marketing of the fruit; and to do this, it places bonded agents in the principal markets of the United States and Canada, and one in Europe. These men are exclusive salaried agents, except in territories where only a small quantity of fruit is sold, in which places the services of brokers are sometimes used. These agents work constantly to increase the trade. They distribute placards among the jobbers and retailers of the East where they can be well displayed. They visit the jobbers and show them the advantages of buying from consistent regular shippers of widely advertised brands. They solicit orders for cars that may be already on the track or still to load. They are alive to every opportunity to make a sale."

Another one says, "We can't depend on the old markets to care for the new increasing supply. We need to sell fruit in small towns and country villages that don't have it now. We will soon be exporting to the original home of the navel via Panama canal on the new special refrigerator boats.

"But perhaps after all our greatest hope lies in making the orange a staple article of diet rather than a luxury. We must make people eat an orange a day where they have eaten only one a week before. We must make the little markets buy oranges by the carload instead of by the box as they do now. To do that, we must keep California fruit before the people all the time to tempt their appetites; we must keep the quality so good that one orange calls for more. Frozen or immature fruit won't do that. We must make them read advertisements that will keep them thinking about the fruit they may have."

In New York, the writer saw a tremendous display of Exchange oranges on the auction pier altogether along one side of the building.

But the things that caught the eye were six signs set high on top of the fruit. Each sign was about 8 feet long and 30 inches high. It was labeled in big letters, "These are the famous Sunkist oranges. Everybody eats them." This is probably one of the ways in which the $200,000 is being spent in advertising.

The agent of the Fruit Growers Exchange in Philadelphia has taken advantage of an opportunity all his own. That city has only half the population of New York, but covers more ground, being more a city of homes. This condition has encouraged the operation of "chain stores." One firm alone operates 300 small stores located on the street corners throughout the residence portions of the city and in small towns of New Jersey and eastern Pennsylvania. Other firms control at least 700 more of the little chain stores.

These companies reach the consumers direct, but never till this year have they handled California oranges after Easter, if at all. But due to good missionary work of the Exchange agent, the largest of these has been featuring California oranges in its advertising and will continue to handle them all summer. For nine consecutive days in June they featured the oranges on the billboards in front of their stores, and in the daily papers which each firm circulates for its own advertising purposes throughout that territory. This was for a special sale made possible by the large quantity they handled, so they could buy at the Philadelphia auction on a margin of 2 to 5 cents a box. The demand created by this sale will of course be felt in all stores handling fruit. The publicity of the wide advertising done by the firm, and the juiciness of the real article, on a market which has heretofore been held by Florida, has worked greatly to supplement the newspaper advertising of the Exchange in convincing the public that the frosted stuff of a year ago is not characteristic of California oranges. The Sunkist wrappers are being more and more left on the oranges as displayed on the fruit stands, and people are learning that they guarantee quality. Let not the grower spoil the good work and waste the advertising money by putting anything but strictly fancy fruit under "fancy" labels.

As a proof of the drawing power of the Panama-Pacific International Exposition as well as proof of the state of preparedness and the prosperous condition of the country more than 1000 persons pay 25 cents admission to the grounds each day. The average is 40,000 each month. Most of these are tourists.

In order that you may be sure to get Select Stock of just the Varieties you want for the coming season's planting, book your orders NOW with one of the

LEADING CALIFORNIA NURSERIES

TREES OF SUPERIOR QUALITY

We are now booking orders for French, Imperial, and Sugar Prunes on the **Myrobolan root.** Also Tuscan and Philips Clings, Muirs and Elberta Peaches, Plums, Cherries, Almonds, Olives, Walnuts, Pears, Apples, of the leading and best varieties.

Stock first class and guaranteed true to name.

Write us now for prices.

BENNETT H. MADISON, Princeton, Cal.

KIRKMAN'S RELIABLE TREES

Trees that grow and bear true to name. Now booking orders for next season. Write us now about what you will want.

KIRKMAN NURSERIES
2525 Tulare St., Fresno, Cal.

WALNUTS

GRAFTED AND TOP-BUDDED. A LEADING SPECIALTY.

We are the only nursery that has made a success of top-budding the walnut, and invite investigation. There is no finer stock in the State, and all of our stock is propagated from known bearing trees. Careful planter will take heed to this. Please write or call.

Pedigreed French Prunes

Blenheim Apricots. Ornamental Stock in Pots. Landscape Gardening a Specialty.

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Now booking orders for all varieties of nursery stock for next season's delivery.

French, Imperial, Sugar and Standard prunes on all roots. Apricots, Bartlett Pear, Cherry, Peach, Apple, etc.

FIRST CLASS STOCK TRUE TO NAME.

TREES

BUY FOOTHILL GROWN TREES

For good roots, thrift, and hardiness they can't be beat. Quality considered, they challenge all competition. We are prepared to furnish the best of everything — Olive, Almond, Peach, Pear, Plum, Prune, Apricot, Cherry, Apple, Walnut, Grape, Quince, etc.

Orders are being booked daily and we urge you to not delay. Write us.

Silva-Bergtholdt Nursery Co.,
Box 541. Newcastle, Cal.

TREES

French and Imperial Prunes, Bartletts and other Pears; Tuscan and Phillips Clings, Fay Elbertas and other Peaches. Cherries, Plums, Apples, Grafted Walnuts, etc. Stock pure and of best strain. Place orders promptly. Prices reasonable.

TABLE GROVE NURSERIES
Healdsburg, Cal.

Stuart Prolific Almond Buds

FOR SALE

Can furnish any quantity from now on.

$5 a thousand in large lots.

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EUCALYPTUS SEEDS

In large or small quantities, 40 species to select from. Write for my free pamphlet, "EUCALYPTUS CULTURE." Trial packets, 15c each, 4 for 50c.

THEODORE PAYNE,
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INVESTIGATE

The opportunities for the homeseeker and business man

—Along the Line of—

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IN CALIFORNIA, NEVADA AND UTAH

1,500,000 Acres

of good improved and unimproved lands, offering every possibility

—Awaiting Settlement—

Write for a copy

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Folders listing and explicitly describing possibilities of this new country.

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You Need Paint?

Buy at Dealer's Prices.

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Save the Dealer's Profit.
Write today for prices.

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Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Ore

Country Vegetables.

DOUBLE USE OF LAND.

[Written for the PACIFIC RURAL PRESS.]

Overlapping crops on the same land economizes both space and water for F. Guido of San Mateo. On July 23, a patch of sweet corn was in silk only a few days from being ready for the table. It needed water, for rush of work had prevented cultivation after the last irrigation.

Before supplying water, however, he set large cauliflower plants about 18 inches apart half way up the ridge along each row of corn. This was out of the way of the corn pickers and still low enough for the water, which was turned in the same afternoon they were planted, to settle the dirt thoroughly about their roots. The corn is a first-class shade for the new plants till they get started.

The plants were laid out in place along the rows, no particular care being taken to keep their roots from drying out, though there was more or less dirt on them.

The planters used trowel-shaped dibbles, 4 to 7 inches long, each weighing a pound or two, fixed hoe-fashion on the end of an 18-inch stick, which made a convenient handle for the hard blow necessary to open the hard ground. After putting the plant into the opening thus made, dirt was pounded about it with the back of the dibble. This permitted fast work and the irrigation of the corn that followed did excess duty on the cauliflower. The land also does double duty for awhile and keeps busy all the time.

FOUR CROPS PER YEAR.

A crop of barley is sown about January 1, by Mr. Rogers of Orange county, and plowed under when headed out. Potatoes are grown next, and blackeye beans are planted as soon as the potatoes are harvested. They mature in time for a crop of cabbage to be grown the same year.

AHEAD OF THE CORN WORM.

When sweet corn begins to silk, C. E. Trapp, of Los Angeles irrigates thoroughly and keeps the ground moist till all the corn is picked. This fills out the kernels and rushes the corn so fast that the majority of worms, which hatch in the silks, will not have time to work their way far down the ear. He has observed that drier corn in fields nearby is badly spoiled by worms.

The water fills out the kernels juicy and plump. It keeps the husks bright and attractive, and makes the ears much easier to break from the stalk.

He sells the stalks at $8 to $10 per acre to dairymen as soon as the corn is picked.

Robert Haenggi encourages the blackbirds which he has observed diligently seeking the worms. They stand on the ear, seeming to listen, and then open the husk directly over the worm.

GETTING YOUR MONEY'S WORTH OF WATER.

How to get the most for the least is the problem that has held man's attention since the beginning of things. No matter what you are buying, no matter whether the expenditure be time, physical effort, or money, the problem remains practically the same. Now, when the dry season is on, your problem perhaps is water for irrigation purposes, and you may have under consideration your first pumping plant, or you may be contemplating new pumping apparatus in place of old. Your problem is: "How can I get the most water for the least money?"

Engineers and power experts have studied the subject, and many methods of water pumping have been tried. All reports seem to indicate that the two most practical methods are by the use of a direct-connected electric motor or a distillate engine. These are the types of equipment in most common use.

In considering their comparative advantages, it is found that the installation cost of the two equipments is about the same. The chief consideration, therefore, is to determine which is the more convenient and which the less expensive to operate and maintain.

Let us assume, as an example, it is desired to irrigate a 60-acre ranch requiring 18 irrigations of 1½ inches each. This will necessitate a pump capable of delivering 750 gallons per minute. A 15-hp. distillate engine should be used to drive a belted pump of this size. The cost of distillate consumed as fuel, at 8½c per gallon, would be $150.02 for the 18 irrigations.

The electrical method has the advantage that it is cleaner and easier to operate. Balanced against this, however, is the distinct disadvantage that the source of electrical power is generally many miles distant. The chance discontinuance of this power through a break in the transmission line, or for any other reason, leaves the irrigation plant useless and the owner helpless to remedy the condition. When equipped with a distillate engine, the farmer or rancher has his pumping operations entirely under his own control, and in practically every instance where mechanical difficulties arise they can be remedied locally and at once.

If it is desired to move the pumping location even to some distant point on the ranch, the distillate engine admits of much easier and cheaper transfer, by reason of the fact that the outfit is complete in itself and does not require the installation of such a medium as the electric supply wires.

A good type of distillate engine, given proper attention, and lubricated with a grade of oil of known value, will prove a most valuable and economical source of power for many other purposes besides irrigation.

PATRONIZE HOME INDUSTRY

Fleur de Soufre, Anchor Brand, and Eagle Brand Flowers of

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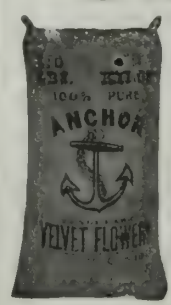

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CALIFORNIA STUMP PULLER COMPANY
704 Bryant St., San Francisco

Constructive Agriculture—No. 30.

WORKING THE FRUIT AUCTION.

[Written for the PACIFIC RURAL PRESS.]

A "lot" of California fruit was being sold on the auction market in an Eastern city. Pandemonium reigned among the 200 buyers on the rising tiers of seats facing the auctioneer. That dignitary sat upon his throne working his jaws like a machine speeded up past control, his face red with the exertion and lack of breath, his eyes alertly running over the bedlam in front of him. Swiftly building up the price 5 cents a jump as he caught the nod of a buyer in this part of the house or distinguished the furious bidding in another, he ruled the excited crowd with lightning-like decisions announced in the same clattering monotone with which he built up the prices.

The buyers were standing up, waving their arms with the big fruit catalogs in their hands, yelling in hoarse voices to attract the auctioneer's attention to their bids, stamping the floor, and even cursing a little when the auctioneer knocked the "lot" down to another man who was bidding the same price or better.

These fruit dealers are there to get California fruit as cheaply as possible. But get it they must, and when a fine lot like the one just sold is put up for bids, there is furious competition to get that lot. The auctioneer calls for higher bids as long as there seems a chance for a better price; then he announces the sale and the buyer's name to his bookkeepers, and to the representatives of the shipping companies, whose seats also are in front of the buyers.

The next lot is announced; the auctioneer asking a stated price for the first bid, but keeping those jaws going. That lot was sent by a man who had once packed smaller sizes and doubtful fruit under the top layer. The auction buyers have not taken the trouble to inspect this grower's fruit this morning, for there is much fruit for sale under brands known to be as good underneath as on top, and always first-class on top.

The auctioneer, unable to secure a bad as asked, cuts the price 25 cents and wags his jaw on that figure in vain. By this time an avaricious foreign fruit peddler breaks the silence of the buyers with a bid still 25 cents lower, and gets the whole lot because no one will pay more.

California fresh citrus and deciduous fruit is sold in two general ways east of the Sierras. Much of it is sold at private sale by the agents of the shipping companies.

The prices of the private sales are based on those of the auctions, which fluctuate entirely and freely with the supply and demand on each market. These fruit auctions are rather scarce, few cities having more than one and only the largest cities having any at all. These are New York, Philadelphia, Boston, Chicago, Cincinnati, Cleveland, Pittsburg, Detroit, and perhaps a few others.

The fruit reaches these markets 7 to 12 days after it leaves California; and it would be an education for each grower to make careful detailed records of the condition of his fruit when packed, then ask a disinterested person at the Eastern end to make a detailed report of its condition when put on sale. Putting this information together with a report of the icing and the condition of the weather en route will enable the grower to judge quite accurately what his fruit should look like at picking. The salary of the Eastern reporter is likely to be returned to the grower several times over in the first season because of the improvements he can make.

It is a fact that the first fruit of most any kind will sell at a good price regardless of quality; and in seasons of scarcity, most any fruit will sell. But that grower whose fruit and packing are top notch at such times not only gets best prices then, but establishes a reputation for his name and brand. Then in seasons of glut, or of cold weather when little fruit is consumed, or hot weather when much fruit is spoiled, this brand, already proved and known to the buyers, not only gets the best price, but is often the only fruit that sells for enough or more than enough to pay the freight.

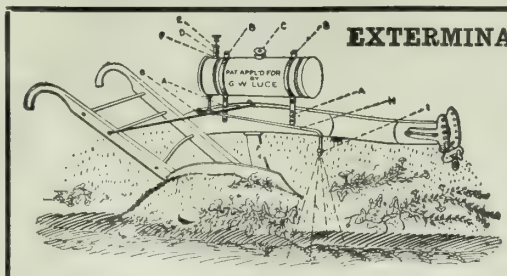
This brings us to the point emphasized by the representative of the California Fruit Growers' Exchange at Philadelphia, a man experienced for years in most of the Eastern auction markets. Other wholesale dealers and California agents have emphasized the same thing. To sell fruit profitably on any auction a brand must be honest pack first of all; and secondly, it must be consistently kept on that market in quantities large enough to supply all demands for that brand.

A dealer buys some labeled fruit at auction and sells it to his retailer customers in the city or surrounding towns. If the consumers pronounce it good, the retailer orders more of that brand from the dealer. He looks for it among the fruit displayed before the auction sale commences, and if he finds it, will bid high enough to get it, because he has orders for that brand. If he doesn't find it, there is disagreeable correspondence or telegraphic attempts to substitute another brand. Perhaps the other brand is poorer quality, and the dissatisfied retailer buys next time from the first dealer's competitor. So it is, that the buyer at auction likes best and pays best to handle well known brands, a regular and sufficient supply of which he can depend on to fill his orders. A staple trade in such a brand also makes unnecessary the time required to inspect each lot before bidding on it. Such fruit sells when there is no demand for less known brands which come spasmodically. This explains why Vacaville can "play the auctions" successfully while Placer county's more spasmodic auction shipments are less satisfactory, other things being equal.

A staple trade in one or more well known brands is like success—it breeds success. Pretty soon that brand is mentioned on the letter heads of the dealers, and the advertising of the retailers; it is known and depended on and called for by consumers.

Moreover, the consistent shipment of certain brands to the same auction, even in times of dullness, is necessary to the success of the auction in drawing large numbers of buyers, and consistent support of both buyers and sellers is so necessary to the existence of the auction, that consistent shippers may easily get such accommodations and slight advantages in display, as the auction company may have at its disposal, thus increasing its own chance for ready sale.

A consistent supply of an honest first-class pack, from the same grower throughout the season, to the same auction market—these are the points most emphasized by all the dealers and sales agents visited in the various large Eastern cities.



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For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit, $8.50 f.o.b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.

The growing season and not the dormant period is the right time to do the work.

One large grower purchased during 1913 $2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphis, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

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California Fruits and How to Grow Them

BY

EDWARD J. WICKSON, A. M.

Just from the Press

The author spent several months revising, adding to and bringing the figures up to the moment.

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SEVENTH EDITION

June, 1914.

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PACIFIC RURAL PRESS

420 MARKET ST., SAN FRANCISCO, CAL.

PUBLISHERS

AGRICULTURAL REVIEW.

Deciduous.

Shipments of Placer county fruit, mostly plums and peaches, both to the canneries in California and to the Eastern markets, are far ahead of last year in quantity. Newcastle alone has shipped over 250 cars more than at the same time a year ago. Nearly a thousand cars have been shipped to date. Forty-two cars were sent East in one day.

Many Orange county apricots were too small to dry profitably. The season there closed two weeks earlier than usual.

Apricots near San Jose, mostly Blenheims, are mostly harvested. Cutters for the drying yards have been scarce and have worked as late as 10 p. m. Prune picking is under way.

The Dried Fruit Association is warning its members not to accept the cracked prunes of the Santa Clara valley because they are likely to mold.

L. J. Lathwesen's Sugar prunes and Imperials are a larger crop than ever this year. This orchard is noted for heavy crops.

The Farmers' Union estimated the loss in Santa Clara county from cracked prunes at 10% to 15%.

Hungarian prunes in Butte county seem to be 75% of a crop.

Gravensteins from Healdsburg in large quantities have been packed this season in Santa Rosa for shipment to all parts of the world.

Apples in Butte county are better than was expected.

Two cars of Gravensteins per day are going out from Sebastopol. The crop is larger than was expected, is free from worms and of good size and color. The first pool of fruit shipped by the Apple Growers' Union was closed last Saturday to enable shippers to that date to receive earlier returns.

Eleven girl packers at Sebastopol put up an average of 110 boxes one day last week.

Folsom is to ship more deciduous fruit than ever before.

Nevada county has the largest pear crop in years. It is to be shipped under a Nevada county label.

Pear shipments to South America are lighter this year than last because they did not carry well.

Sacramento River pears are going East in large quantities at good prices, averaging last week about $2.25 per box.

Sutter county peach shipments are estimated to total 1,000 cars for the season. Most of them will be shipped to central California canneries.

Oakdale, Stanislaus county, is shipping and drying peaches by the carload. Scarcity of labor has resulted in installation of a power peeling machine in one of the orchards.

Several cars of peaches are being shipped by the Farmers' Exchange of Modesto every day to Omaha, where they are distributed by Exchange agents.

Selma also is competing by the carload on the Eastern peach market. The equivalent of nine carloads also was recently canned in one day.

The new Manteca cannery started on peaches this week.

Hanford claims the State champion fruit packer—record, 400 boxes in 10 hours.

Citrus.

The newly organized Orangevale (Sacramento county) Fruit Growers' Exchange has already outgrown its quarters and has leased one packing house and bought another.

Fancy California Valencias sold at $4.50 in New York last week. Common stuff sold as low as $1.15.

Santa Fe officials estimated last week that the southern California lemon crop yet to be moved this season equaled 2,000 cars—Valencias to pick, 8,000 cars. Shipments from San Bernardino average about 80 cars daily and from Riverside at this time about 75 per week.

The Tulare Valencias are mostly shipped already. One grower took about 9500 boxes from 16 acres of 10-year trees. Lindsay claims to have shipped nearly 3,000 cars, half of all from northern California.

The Bloomington, Riverside county, orange crop is about off. It was 100% bigger than any previous year. Lemons are yielding good crops of good fruit.

A heavy second bloom is now on the orange trees in San Bernardino county.

The Stewart Fruit Co. has already contracted much citrus fruit of the next crop in the San Fernando valley. Their net to the growers on Jaffas, Mediterranean Sweets, and St. Michaels was $1.17, $1.06 and $1.56 respectively.

Lemons about Porterville promise a third bigger crop than the record one of three years ago.

Ventura county has quarantined all nursery stock from most of southern California and Tulare county from August 1 until proof of freedom from disease is received.

A citrus association representing over 300 acres was recently organized at Porterville.

Olives and Nuts.

A company proposes to plant 1200 acres of olives in Glenn county next year.

Tehama county olives have a heavy crop growing. The Heinz company has just set out 100 acres of Missions near Corning. The Corning Olive Growers' Association has completed its new plant for both pickling and oil olives.

The walnut crop of southern California will be short, especially in Ventura and Santa Barbara counties, while it is fair in San Gabriel valley. The shortage in number of nuts will be partly compensated by increased size and quality.

Almonds about Chico are improving in prospects so that the total crop will be normal though some orchards did not pollenize on account of rain at blooming time.

Grapes.

Orders are being received for 300 to 700 tons daily of the 1913 raisin crop held by the Associated Raisin Co. This is largely due to an announced reduction of nearly one cent per pound for August and September delivery.

The Associated Raisin Co. plans to spend $100,000 advertising raisins in Eastern periodicals during the year beginning in September.

A Sanger table grape crop from 27 acres sold this season for $5,000.

Dinuba district grape shipments are again in full swing after the hold-up caused by rejection of unripe fruit recently.

The extra large table grape crop of California will probably be marketed

THE SCHMEISER
Giant Engine Scraper
"MOVES THE EARTH IN CHUNKS"

Cost of Leveling Cut

With Schmeiser machines it is now possible to prepare land for Rice and Alfalfa at a Reasonable Figure.

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Say how much land you have to level and check, and what kind of land it is. WE HAVE A MACHINE FOR YOUR WORK.

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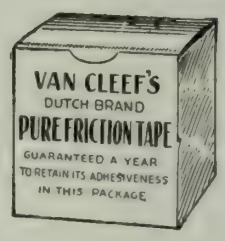

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The same applies to Surface Irrigation Pipe. If you don't get the kind that is built, not slapped together, you are pulling the wool over no one's eyes but your own.
Our material was on the market when half the new concerns were still in their cradles.
Don't you think that these years of experience mean something to you?
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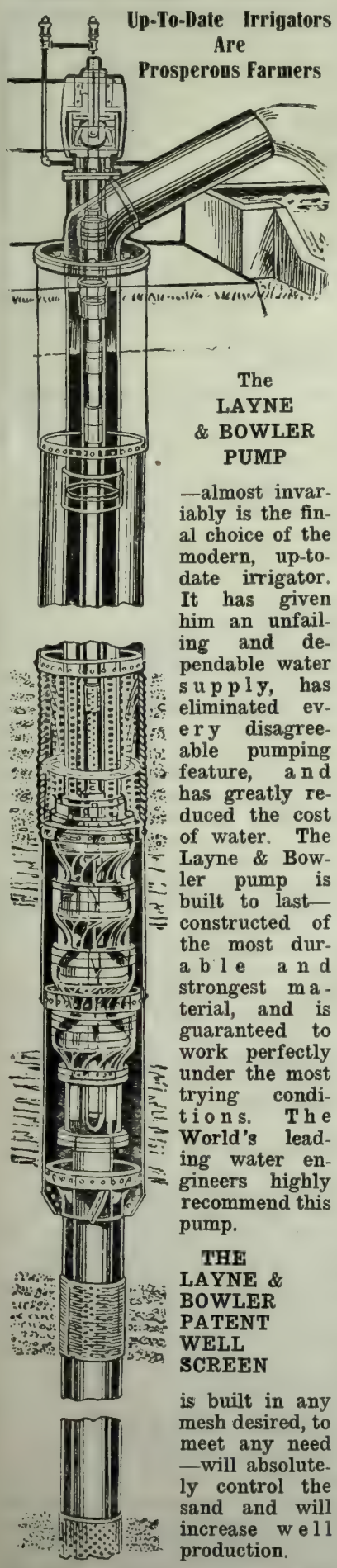

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is built in any mesh desired, to meet any need—will absolutely control the sand and will increase well production.

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satisfactorily in spite of financial depression and big crops in the East, if unripe grapes do not destroy the demand.

The Lodi Tokay crop looks 25% bigger than last year on account of increased acreage.

Vegetables.

Too big to be of any use is the cucumber grown in Colusa county—33 inches long with a maximum diameter of 12½ inches.

Turlock shipped in one day last week 20 cars of watermelons at $12 to $7 per ton, and 14 of cantaloupes at $1.50 to $1 per crate to the grower.

A 500-acre melon ranch at Manteca is shipping several carloads of melons per day.

Imperial valley shipped 4,446 carloads of cantaloupes by Pacific Fruit Express during the season just ended.

Onions at $2 per sack net have yielded high returns for the extra big crops in the Delta. Some New York shipments, however, reached market in bad condition, having been shipped in sacks. Better packages ought to be used for shipments on which so much freight must be paid. The early shipments were pre-ripened by crushing down the tops and digging in time to dry a few days before shipment.

The new crop of beans will meet a hearty reception since the old crop is about cleaned up. The Delta has about 25,000 acres, an increase of 4000 over last season. About 60% are pinks and 15% bayous.

A Southern Pacific representative estimates the bean crop of Ventura and Santa Barbara counties at over 1,100,000 sacks, which will be moved soon after September 15.

The potato emergency convention will convene at Stockton, not in August as previously announced, but on September 8 and 9. This change is made at the suggestion of the U. S. Department of Agriculture and will bring to us Dr. Appel, a very noted potato pathologist from Europe, and Dr. Orton and Prof. Stuart, experts from the U. S. Department of Agriculture, none of whom could be present at the earlier dates. The principal topic will be means of restraining the spread of the potato tuber moth which is infesting large areas both in this State and elsewhere.

Sugar beets at Visalia average about 22% sugar.

The sugar factory at Anaheim began operations this week. The price of beets is $4.50 per ton to the grower.

Grain.

Grain threshing is about over in Tulare county. The grain has weighed heavier and graded better than in recent years.

Until last Saturday, $120,000 had been paid to grain ranchers of the Porterville district this season.

Two hundred acres of wheat near Chico were recently burned.

A Texas rice-growing expert says that the rice section of Butte county leads the world in requirements for successful culture of that cereal.

The Phelan ranch near Chico had rice on forty acres this season. The acreage will probably be increased to 3,000 next year.

Alfalfa.

Alfalfa in the citrus sections is selling at $8.50 per ton delivered.

Santa Barbara county alfalfa increased 100% in acreage this year. Only three crops are cut per year, but there are now 2,000 acres in this county.

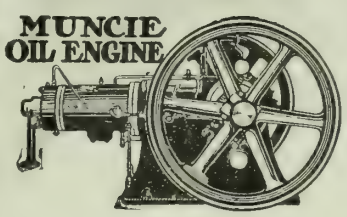
The Dixon alfalfa mill is said to have closed down because farmers would not sell the hay at the price offered, $4.50 per ton. The mill operators say they are paying only $4 in the San Joaquin valley.

Merchants of Chico who have been trying to get the neighboring farmers to "patronize home industry" were recently requested by the farmers to buy the fruit and vegetables they handle, not from outside districts, but from those about Chico, paying as much for home produce as they would pay elsewhere.

Miscellaneous.

Butte county bees have increased by 3,200 stands during the past season.

Between July 1, 1913, and June 30, 1914, receipts from the National Forests in California amounted to $261,415.44. As compared with the previous year, grazing and special uses show an increase, while the timber and water-power industries show a slight falling off. Thirty-five per cent of the receipts from the sale of National Forest resources is available in California. Of this, 25% is paid into the state treasury, to the credit of the counties in which national forests are located, for the benefit of the school fund. The remaining 10% is expended by the Government on public roads in the forest regions. The road fund will amount to $26,141.54, and the school fund will receive $65,353.86. Expenditures, the chief item of which is for protection, are largely in excess of receipts.



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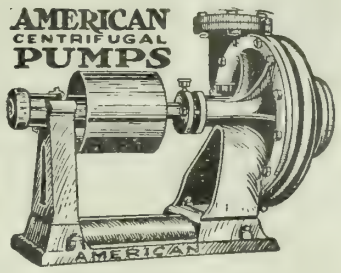

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Write for Catalog and prices.

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68 Fremont St., San Francisco.

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SIMPLE—RAPID—DURABLE—CONVENIENT

The Handiest Whitewash Sprayer made. It throws a spray as strong as a power spray. For the Farm, Orchard, Vineyard, Hop-yard, Chicken Ranch, etc.

Send for Circular and Information Now.

THOMAS R. BROWNE, Stockton, Cal.

UNRIPE CHERRIES PASSED UP.

A box of rather unripe speckled cherries was displayed early in the morning of June 16 on South Water street, Chicago. The dealer attempted to sell them to a buyer.

"Not enough color," said he.

"Here are some better ones," said the dealer, and he opened several boxes of solid-colored cherries. These he sold at a specially high price to the man who wouldn't buy the speckled ones at any price.

Cherries do not color en route as plums do. It is certain that they can be picked so as to reach the market sound and of solid color. Then if there is a dullness, they will sell when the speckled ones will not.

RIPARIAN RIGHTS AND WINTER IRRIGATION.

To the Editor: I have a piece of land one side of which is bounded by a gully or creek which has water flowing in it, a good part of the year. I want to put in a pipe cistern from this creek so that in the winter, when there is a good stream flowing I can give the ground a good soaking, but I want to be sure that no one can stop me from using it, after the pipe has been installed. I am also planning on buying a narrow strip of land on both sides of the creek above me, in order to give me the necessary head.

If I file a water right on a certain part of the water, will that give me a clear right to use it, and if so, how are water rights obtained?—A. G. R., San Jose.

ANSWER BY SYMMES, MEANS & CHANDLER

To the Editor: From the statement in the letter of A. G. R., it is inferred that the tract of land is riparian to the gully or creek. The owner, therefore, has a right to take and use water flowing in the creek, which right must be shared with other riparian owners. As the desire of the writer seems to be to irrigate only when there is "a good stream flowing," the probability is that at that time there will be sufficient for all riparian owners who care to use the water. The point is that, if any lower riparian owner objects, a division must be made so that each will have a reasonable use of the full flow.

There is no necessity of filing a notice of water appropriation as the right acquired thereby is inferior to the riparian right. Any riparian owner can enjoin the diversion of water by a mere appropriator.

San Francisco. A. E. CHANDLER.

Why Mr. Pillsbury's Argument is Unfair.

To the Editor: In your issue of July 11, Mr. Pillsbury, chairman of the Industrial Accident Board of California again explains the status of the farmer under the compensation law and endeavors to show how the farm laborer is carrying the greater burden of the contingencies of life, while the farmer totes the small end of the load.

Mr. Pillsbury is so sure he has secreted the "niger in the woodpile" beyond the ability of anyone to uncover him that he invites anybody to begin the search. I accept the challenge.

The fallacy of this argument lies in the failure of Mr. Pillsbury to recognize the fact that labor is labor, whether it is performed by a farmer or a hodcarrier; that the farmer laborer and the farm laborer, in their capacity of laborer are in their economic relation to society, the same. "In the sweat of thy face shalt thou eat bread," is an edict from which there is no alternative for the human family. Labor is the one thing that makes available the things for the sustenance of the race. Nothing can be made to serve for the good of man without the application of mind or muscle, which is labor. He who labors is naturally entitled to labor's rewards. This is the great fundamental principle of justice which Mr. Pillsbury ignores.

According to his deductions, the full risk of accidents to farm labor is, in terms of insurance, $3.23 on each $100 of a farmer's payroll, and the farm laborer carries the equivalent of $1.73, or more than half of the risk. If this $3.23 covered all of the contingencies of life arising under the employment of this farm laborer, Mr. Pillsbury's presentation might look plausible. But let us see how it will work out on the average farm; say, where the farmer himself does one-half of the work and hires a man to do the other one-half.

For simplicity, assume, which is possible, that the labor is the only expense involved. Both will share the products of their joint labor. The farm laborer will take his portion first and the farmer will then take a portion—if any is left, or if none is left he will dig it up from his previous savings. The farm laborer has his portion insured by the farmer. Then in the course of the performance of this labor an accident may happen. It is just as liable to happen to the farmer as the hired man. It may not hurt him as much, however, as it may be conceded he is not so susceptible to pain. This risk is worth $3.23 for every $100 of the payroll on which the farmer pays $1.50, or $4.73, as against $1.73 for the laborer. Their joint labor constitutes an industry, and if the laborer is getting any less out of the $200 worth of labor than the farmer, it is because of the just offsets that the laborer has his portion insured to him in definite terms and the farmer may be using what represents labor he has performed in previous years, or capital.

But in the case of the renter the element of capital may be eliminated entirely. It must be borne in mind, too, that the farmer's risk is also plus the pain and suffering that belongs with all of these distressing circumstances. The stock argument will say that the farmer's capital should bear a portion of the risk, but if this farmer has land or money, in its accumulation he no doubt has paid every obligation incident to his obtaining it. Then where is the justice of the man who will make him pay again?

Then again, if this farmer is up to date, he will have a family. The wife cooks the meals for this hired man three times a day in addition to other domestic duties. Gasoline stoves and paring knives are just as dangerous to operate as mowing machines and wheelbarrows. Here again is liability to accident. Minor children may work on this farm; this involves more liability of accident. However, this consideration may not count, as under the compensation act fathered and sponsored by the Industrial Accident Board, the welfare of these women and children in their capacity of farm laborers is of no consequence and nobody has taken the trouble to figure out what their risk is worth.

Then again there is the greater item of public liability, incident to the man's employment. Some farm laborers drink whisky, and there is, unfortunately, no law to prevent it. If the laborer gets drunk and lets the farmer's team run away, he may not only incur an injury to himself that the farmer must pay for, but he may be the means of injuring somebody else, to say nothing of the injury to property.

Mr. Pillsbury says that the legislature might be induced to divide equally the burden of accident between the farmer and his employe if the entire risk can be insured. If all the risk incident to a man's employment could be included, the proposition is worth considering. Enforced insurance should include the boss, the cook, and all who work, and the cost should fall on all in the proportion in which they are benefited, leaving out of consideration that phantom resources called "industry," because it pays all it owes in rents, profits, and wages.

As a matter of fact, these arguments Mr. Pillsbury is putting forward in justification of a compensation law are not those generally accepted throughout the world as its just basis. The original and most reasonable theory, as it has run through court decisions, is that society in general should bear the burden of accident in the industries in lieu of other forms of charity, and by taxing it to the employing class the cost will be passed along to the consumers. In the application of this principle to the large agricultural interests of this States it proves to be largely a fallacy.

The farmers are not included in the compensation act and are not under the authority of the Industrial Commission of California in any way. This is because they convinced the members of the legislature that they were in no position to add anything to the price of their products to cover this insurance and should consequently be excepted.

The justice of the Golden Rule is acknowledged by every reasonable man. This is not true of the compensation theory. In its inception it was not founded entirely on any great basic principle of right, and in the best form in which it exists it is a strange compromise of good and evil. It gains adherents and spreads over the world because of the advantage it offers to a numerous class. It is favored mostly by those who expect to profit by it and is opposed by those who are wronged by it. It carries with it a gambler's chance to get something for nothing. Upon it may depend the emoluments and tenure of office. Hence it may be that the spirit of selfishness that pervades human affairs may have more to do with its coming than justice and fair dealing.

It has its parallels in such measures as the proposed eight-hour law, the minimum wage and other class impediments to industry that just now threaten to afflict California. Among German authorities on this subject may be found testimony that it has had a tendency to undermine the morals of the working classes, and that it has encouraged malingering, deceit, and dishonesty.

Stockton. ROBT. G. WILLIAMS.

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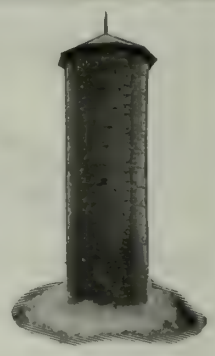

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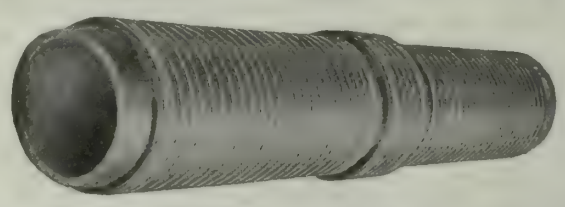

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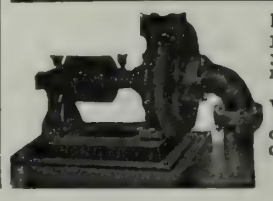

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Mention Rural Press.

Cheap and Sanitary Dairy Practices.

[Written for the PACIFIC RURAL PRESS.]

Cheap sanitation seems to be the most badly needed thing on California dairies at this time, if one is to judge such things by the condition of the average dairyman's buildings and equipment.

In visiting dairies in any large dairy section one finds that the prevailing notion of most dairymen is that to produce a sanitary cream he must have a lot of expensive equipment and buildings.

Experience seems to show that this is not true in most cases, and that oftentimes the same results may be secured by a more moderate expenditure.

At the present time one finds a considerable amount of agitation being done by the State Dairy Bureau and the creameries and condensing plants, favoring the more general use of milk and cream coolers and urging that better care be taken of the utensils after using. In fact, we find that in some sections the creameries and condensing plants are demanding that their patrons give more care to that phase of their business, and that the dairy inspectors are demanding that the law on this subject be more closely lived up to.

One of the chief objections commonly found with the average dairyman's milkhouse is that it is hard to keep clean and does not protect either the milk or utensils from flies, which in summer time means so much to the purity of milk or cream.

We recently saw a milkhouse, which was built at a very low cost, which provided against both of these nuisances. The building was small, being about eight feet square, having a well-drained cement floor, with 4-inch cement wall extending about 12 inches high from the ground. Upon this cement wall had been placed a 4-inch sill, bolted onto the foundation, with bolts that had been sunk in the concrete before it was set. The walls for the building were made of surfaced 1 by 12-in. pine boards, having battens nailed over the cracks. Two windows were cut in the sides, and an opening left for the door. The roof was ventilated with two small openings, screened with galvanized screen to keep out the flies.

One of the windows had a south exposure and a shelf had been extended from the sill, on the outside of the building. Galvanized screen was tacked around this shelf and extended up to the wall of the building, making in this way a screened enclosure, where the utensils could be given a sun bath each day, without fear of being contaminated with flies. A small opening was also left in the outside wall which allowed the milkers to pour their milk from the outside of the building without opening the door each time that a bucket had to be emptied.

On the inside of the building a trowel had been used to make a smooth surface on the concrete floor and wall, the main reason for having built the concrete wall up to a height of 12 inches being to more easily keep the walls from getting slopped up with water when cleaning the floor.

A vat inside of the building, placed a little higher than the separator, held the milk, until the separation was started, the bowl of the separator being located almost directly underneath.

From the separator the cream was run over a water-cooled cooler, this appliance having been purchased at a very moderate cost and being capable of cooling the milk down several degrees, in fact almost as low as the water itself, which was in this case freshly pumped well water and therefore cooler than if it had been standing in a tank all day.

As soon as the separating is done the cans of cream are immediately wrapped in burlap sacks, made especially for this purpose out of grain sacks, and then wet with water. By setting the cans in the milkhouse, out of the sun, it is possible to keep the cream sweet in the warmest summer weather. A little figuring will show that all of the equipment necessary for this arrangement is remarkably small and well within the reach of all dairymen.

Another thing which is being more carefully supervised by the cream buyers and by the State Dairy Bureau is the better sterilization of dairy utensils, and while it is true that a considerable amount of money may be spent on heating appliances and the like, it is not entirely necessary that such expense be gone to, if the dairyman will use a little ingenuity.

A way of overcoming a heavy expense in heating apparatus is being given out by C. A. Starkweather to dairymen whose ranches he visits in his inspection work for the State Dairy Bureau, and one which is both practical and economical.

For the heating of water by his method he recommends the use of a two-burner coal-oil stove, which is both safe and convenient and does not take up much room in the milkhouse.

For a sterilization vat, a galvanized tank is used. This may be purchased at any hardware store and should be made either 18 or 20 inches high, the width and length depending upon the size of the stove. It may be made of a sufficient size to extend out over the sides of the stove or the exact size of the stove, according to the circumstances. A cover, having a handle, should be made to fit onto the top. On the inside of the tank the tinner should solder small brackets, preferably two on each side and two on each end about one and a half or two inches from the bottom of the tank.

A piece of galvanized iron, perforated with holes one-half inch in diameter, should be fitted into the inside of the vat in such a manner that it will rest on the brackets before mentioned. Upon this the utensils may be set where they will receive a good steaming.

At the bottom of the tank the tinner should place a faucet, so that the water may be drawn out at any time.

With this vat only a small amount of water need be heated, the principle being to boil the water and allow the steam to thoroughly sterilize everything inside of the vat by allowing the steam to go up through the holes in the shelf.

The expense of this outfit need not exceed $15 and does not necessitate much work in sterilization, as only a few minutes is required in heating the water to the boiling point.

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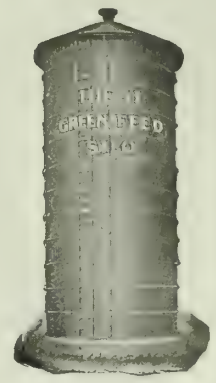

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Hog Lots and Healthy Hogs.

[Written for the PACIFIC RURAL PRESS.]

Experience seems to indicate that the best way to keep a herd of hogs healthy is to provide clean and sanitary watering troughs and wallows, and to furnish shade in some form.

Among those who have found both of these factors essential is John Daggs, of Modesto, who devotes all of his time to the raising of pure-bred Duroc-Jersey swine.

In providing his herd with such quarters, very little expense has been necessary, as Mr. Daggs has taken advantage of his surroundings, and as a consequence his herd is healthy at all times. In fact, he informed us that he has never had any sickness or disease in his herd in the four years he has been a breeder.

That part of the ranch which is used for hog quarters is a part of an old racetrack, the buildings which were formerly used for stalls now being used to advantage for farrowing houses, while the shed roof in front of the stalls is fenced off into sections, making shady and roomy pens for the sows and pigs. These stalls are also used to advantage as quarters for the older sows and young boars, the older boars being provided with separate houses some distance away.

The space in front of these houses is fenced off and used for a yard pen in the daytime, where all of the feeding is done, and during the heat of the day one always finds the herd comfortably located under the trees, which afford ample protection from the hot sun.

In the past only dirt wallows have been provided, but this year a concrete wallow was built at a very moderate cost, and from the manner in which the hogs take advantage of it, Mr. Daggs considers that his money was well spent.

The wallow is 20 feet long, 6 feet wide, and 12 inches high. The two sides and one end are made perpendicular, and are about six inches thick, the other end sloping from the top to the bottom of the tank, which affords an easy entrance. A faucet at one end provides fresh water when needed, and an opening could be easily made at the bottom to drain the tank, as being shallow it is not difficult to drain.

The advantage of this wallow, over many seen, is that both the old and young hogs are able to use it, and on a hot day it is nothing unusual to see the tank full of red hogs of all sizes and ages. In order that no hogs may be injured by falling into the tank from the sides, a low fence has been constructed on all sides except the one with the incline.

Clean drinking water is also provided the herd by having a trough near the wallow, which is supplied with fresh water from the tankhouse through a one-inch pipe. The top of this trough has been covered with boards, and a small opening made near the center. This allows the hogs easy access to water, but does not give an opportunity of wallowing in the trough, as is so often seen in the average hog lot.

It is a noticeable fact that most of our successful breeders have spent little or no money in providing what might be called strictly modern hog quarters, yet almost invariably we do find on these establishments plenty of shade, clean drinking water, and clean wallows. We have often been told by these breeders that the death rate among hogs from cholera and other diseases would be materialy reduced if a reasonable amount of care was exercised in keeping the quarters clean.

VETERINARY QUERIES.

[Answered by Dr. E. J. CREELY, of San Francisco Veterinary College.]

MUCOUS DISCHARGE AND COUGH.

To the Editor: Three-months-old calves discharge whitish or clear mucous from nose; have slight cough; lose strength rapidly.—Mrs. McF., Redding.

Put calves in closed room and heat vapo-cresoline so they will have to breathe the fumes. Bathe with hydrogen dioxide. Separate the sick from the healthy ones. Give daily injections of Archibald's Leucocytic Extract.

THROAT SWELLINGS.

To the Editor: Foxtail in throats of two cows. One swelled considerably under jaw for a month.—O. G. M., Modesto.

The great majority of so-called foxtails are in reality tubercular deposits. I would advise you to test both cows for tuberculosis. Cut into the enlargements wide and deep. You can easily stop the bleeding by packing it tight with absorbent cotton. Scrape and cleanse with Lysol water, tablespoonful to one pint, twice daily.

HORSES EAT LUMBER.

To the Editor: Horses and cattle eat lumber. What is lacking in their food? They are fat. In their pasture and corral is a box of salt all the time. But I am kept busy repairing fences, stalls and mangers.—E. G. B., Martinez.

There is something lacking in the food which nature requires. Change pasture and diet and put lime in the drinking water. All horses are given to wood gnawing.

GROWTHS ON NECK.

To the Editor: Heifer has on top of neck, one-third of the way from head to shoulders, a bunch of grayish growths from size of pea to inch in diameter. They seem painful under pressure.

These are papillomata, due to some local irritant. Snip them off with a sharp pair of curved scissors after washing with lysol water. Apply tincture chloride of iron once daily to the spots.

ENLARGED THYROID IN SOW.

To the Editor: I have a young sow, about ten months old, that got what seems to be a lump or seed about the size of a peach pit in her throat a few weeks ago. Since then she does not seem able to eat. She gets the food to her throat and then coughs it up. It is more like a growth now, is quite long and has grown fast to the flesh. Could it be cut out? I would like your advice.—C. A. G., Ceres.

This is an enlarged thyroid. Paint it with iodine once daily for a week.

Late rains and rust have injured grain yields around Biggs, Butte county.

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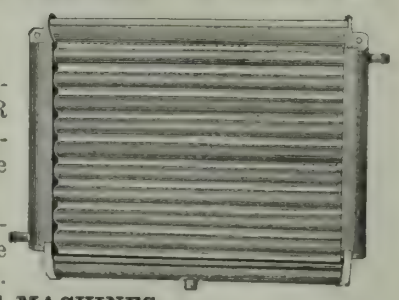

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(*Continued From Page 97.*)

sometimes he bought as little as three tons, and sometimes more, according to how badly the other fellow needed cash, but always he preferred to buy hay in the stack, that had gone through the sweat; for such hay not only made better feed, but according to his experience, there is about 25 per cent more shrinkage in loose hay out of the field than from stacked hay. In fact he says that he will pay $1.50 a ton more for stacked hay than for hay in the cock, on account of the difference in shrinkage.

This year hay has been much cheaper, one lot containing a considerable amount of wild grasses, having been purchased for $4.50 a ton. This lot, as well as all other second-class hay, is stacked outside the corrals and fed to the young stock and dry cows, and take the place of higher priced stuff.

Good hay this year has been purchased at $6 in the stack; when hauled home and put into the barn, it is figured to cost about $7.

While hay is the only feed used in the dairy, it would be entirely feasible to depend upon silage also, for neighbors are this year raising corn for which they would be glad to find a market so near home.

For hog feed, skim milk and alfalfa are the main feeds, yet these are supplemented by buying overripe cantaloupes, watermelons, sweet potatoes, and grapes from farmers, late in the season, at prices which make such feeds highly profitable, as a hog feed.

Although not all of the hay is purchased in the stack or cock, a large part of it is, and most of it is purchased during the months of school vacation, which allows the two boys an opportunity of doing most of the hauling. It is for that reason that the team of horses and the mule are maintained. By hiring another mule during times of exceptional activity in the hay, two wagons can be worked and in this way the hay is soon put into the barn.

At other times of the year when there is little or no hauling to do, neighbors willingly pay 50 cents a day for the use of the mule; and in this way Mr. Mule about pays for his keep the balance of the year.

All of these things go toward making the proposition more profitable and among the by-products from which additional revenue is secured, is the disposal of the manure to truck gardeners and farmers.

The price on this product varies, sometimes as much as $1.50 being realized for each load, while at other times only 50 cents a load is received, but Mr. Gondring says that he could get really fancy prices for it if he had a composing pit, where the best of care could be given it; good fine manure finds a ready sale at a good figure, for fertilizing lawns, in Modesto, a few miles away.

Except for the short time in summer when the hay is being purchased and stored, the daily work here is a snap, according to the boys, who take a deep interest in the stock and upon whom Mr. Gondring says will depend the burden of some day turning the ranch into a pure bred establishment.

As we see it, there is nothing wonderful about Mr. Gondring or his work except for the fact that he has proved beyond a doubt that our alfalfa and other forage crops are worth more, if fed to livestock, than the average farmer who sells to the market buyer receives for them; also that the alfalfa farmer of California must raise more and better livestock if he intends to receive the highest possible returns for his investments.

ROCK PILES FOR THE UNRULY.

To the Editor: It was with pleasure that I read the comments on "A Maintenance Camp for Unemployed" printed in your last issue.

I have long since been a believer in the "rock pile" in the large cities when properly used, and wherever it is used, the tramps and beggars are few. Not because there were no poor people or that work could not be found; but because those who would rather beg and tramp than work kept clear of that city. It also resulted in fewer officers for the tax payers to support and less of the poor and work-a-day people that were out of employment. Neither were these poor on the rock pile, as they were not classed as vagrants.

This system can be and is often abused, but abuse is entirely unnecessary.

Now why can not a State, county, or district employ such means to dispense with the unruly? Then, those who wish to keep employed would find work easier to get and some suitable arrangment could be made to keep them in the country, where they are needed.

Personally I would like to see this argued in your columns, I think it is a solution for some of the trouble.

C. L. DAVIS.

Tonopah, Nev.

PURE-BRED SALES.

The following sales have been reported since our last issue containing this column:

Berkshire Swine.

Whittier State School, Whittier, sold to J. H. Bonnell, Los Angeles, 14 gilts and 1 boar; to Russell brothers, Ventura, 5 pigs; to E. R. Maier, Los Angeles, 1 boar; to E. R. Wredan, Los Angeles, 1 boar pig; to John Scott, Dinuba, 1 boar; to D. McGrath Estate Co., Ventura, 1 boar pig, 3 gilts, 12 pigs.

A. H. Brinton, Woodland, sold to Baird brothers, Woodland, 1 boar pig; to George Merritt, Woodland, 1 boar pig; to L. A. Miller, Newman, 1 boar pig; to O. A. Singleton, Yolo, 1 boar pig.

O. I. C. Swine.

C. B. Cunningham, Mills, sold to F. T. Knewing, San Francisco, 10 sow pigs; Jerry Buckley, Cottonwood, 4 sow pigs, 1 boar pig; J. L. Bernard, Sonoma, young boar; E. R. Upton, Lompoc, young boar; W. H. Carpenter, Oakley, bred sow; J. W. Thompson, Willows, pair young pigs; B. E. Burger, Placerville, 3 young pigs; Kirkland & Ellis, Holtville, service boar; Leo Lynch, Danville, bred sow; I. Freeman, Kerman, 2 bred sows, 2 bred gilts, 1 service boar, 6 sow pigs; John Schwartz, Brawley, service boar; John McGill, Enterprise, young boar; H. L. Shannon, Turlock, service boar; Mrs. Lillian Drake, Alturas, service boar; J. V. McCrae, Berry Creek, service boar; G. E. Barton, Shingle, service boar; H. Witts, Turlock, service boar; C. L. Hargrave, Mendocino City, 5 sow pigs, 1 boar pig; W. F. Hipes, Macdoel, 3 pigs; T. C. Thomas, Grass Valley, 3 pigs.

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of this breed, of all ages including lambs of last Spring. PRICES VERY REASONABLE. Address

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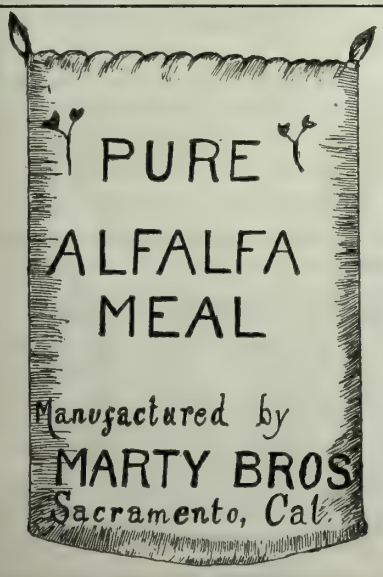

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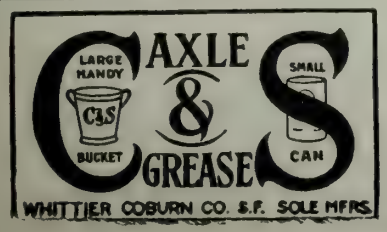

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LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials.
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Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly.
THE CUTTER LABORATORY, Berkeley, California.

Elimination at 1914 Fairs.

[Written for the PACIFIC RURAL PRESS.]

All through the country one finds breeders busy selecting their best individuals for the coming fair season, which will be the last one before the big show in 1915.

In reality this year's fairs will be more in the nature of a try-out for the big show next year; and for that reason, it now appears that there will be a larger representation of all breeds in attendance than has been customary in the past.

We are informed that the draft horse classes this year will far exceed, both in quality and size, those of last year; also that the Shorthorn men are to turn out in large numbers. From last year's shows, it was evident that the Shorthorn men were in need of more representation, and reports from the different breeders indicate that the boys who do the fitting on beef cattle this year will have plenty of competition. Not only does this hold true with the Shorthorns, for the Hereford boys are exerting every effort in putting the white faces in the pink of condition.

In the dairy cattle classes it is evident that last year's grand exhibition will be surpassed, as breeders of this class of stock are rapidly growing in numbers all over the State. As our breeders are beginning to have a better selection, there is every reason to believe that the quality of this division should surpass anything before exhibited.

What is true of the dairy breeds also holds true with the swine men; and it now seems probable that even last year's large showing of hogs will be far outstripped, as swine breeders have far more interest in the stock show, than ever before.

What the sheep men will do this year is still problematic, not because wo do not have some of the finest flocks in the country, but because the demand for breeding sheep has been so heavy this year that many do not deem it advisable to spend the money for fitting and showing.

However, the sheep men will be there in larger numbers than last; and more breeds will be shown.

While there will be a number of district fairs, all of which will be better organized than many of them were last year, it is only natural that the State Fair will bring out the big attendance of both breeders and visitors.

Whatever the 1915 show brings out in the way of high class livestock from this State, it is almost certain that this year's fair at Sacramento will be a big factor in that quality.

IMPROVED COW TESTING RULES.

[Written for the PACIFIC RURAL PRESS.]

One of the few objectionable factors that have come up in the co-operative cow testing work has been the systems used in collecting the salary of the tester, and other running expenses of the associations.

The agreements of most associations are to the effect that each member will pay a stated sum per year for the testing of each cow. Theoretically this is the logical way to make the rates, as each man would be suppose to pay the same price for his testing, whether he had a large herd or a small one.

In practice, however, it is usually found that the tester is compelled to test several small herds in the association, which are not sufficiently large to pay for the expense of testing. For instance, a herd of 20 cows is entered at $1.50 a head a year, making a total for the year of $30. For this amount the tester is compelled to spend 12 days of his time during the year. As it costs the association $3 a day for this man's time and other small expenses, the association has lost $6 on the 20-cow herd.

The Tulare Cow Testing Association has overcome this condition by refusing to test small herds, unless several of them are located close to another. This enables all of them to be tested in one day. By this method, the association comes out even, the only objection being that some of the owners are compelled to take their own samples and do their own weighing.

After two years operation, members of the Stanislaus County Cow Testing Association have found a way of overcoming this objection which they believe will allow the smaller owner an equal chance with the larger owner to have his testing done and still allow the association to come out even.

This is being done by having a sliding scale which is: for herds of 25 cows or under, a fixed charge of $3 per 50 cows, a charge of $1.50 per cow per year is made; for herds having 50 to 75 cows, a charge is made of $1.25 per cow per year. As it sometimes happens that an owner will want to enter more cows than he contracts for at the beginning of the year, a provision is made that allows him to enter more than his contracted number by paying a flat rate of 15 cents a month for all such stock.

We were told by the president, Walter Bowen of Modesto, that so far the new plan has met with much favor, as it gives both the large and small owner equal opportunities.

HINDU OR SACRED CATTLE.

To the Editor: I am running a dairy and have an opportunity of buying a full blood Hindu cow and a three-quarters Hindu bull. What is the reputation of the breed as a dairy stock? Do you know of others of this breed and what?—C. D. P., Oakdale.

[The Hindu cattle are also sometimes called "sacred cattle of India"; and are familiar sights at most circuses. They are smaller and more slender than our cattle and their more suitable conformation and gentle disposition fit them so excellently for the road that they are freely used for purposes of travel in their own country. Ranging from a clear white to a dirty cream color and having curious humps, they are easily distinguished from our cattle.

They have been used to some extent as a cross on beef cattle in Texas, for the purpose of eradicating the cattle tick, but we have no record of their having been used for dairy purposes. We believe that you will do better in purchasing a registered bull of some of the well known dairy breeds. So far as we know there are no other Hindu cattle in this State.—EDITOR.]

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that two-thirds of all complaints about cream separators are due to faulty lubrication. That is because the close-fitting, fast-running mechanism of the separator demands a special oil—and most people use "just any old oil."

Standard Hand Separator Oil

is made especially for cream separators and we know that it is "right" because our lubrication experts have made a study of separator construction and exactly adapted the oil to the requirements. It is just the right body. It doesn't "gum." Dealers everywhere.

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Hillcrest Stock Farm
THORNTON S. GLIDE, Prop., DAVIS, CAL.

"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

Breeder of
Short-Horn Cattle, Shropshire and Merino Sheep

Offers for Season of 1914 an exceptionally fine lot of Purebred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.

San Ramon Shropshire Flock
Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.
PRIZES WON BY FLOCK IN 1912
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.
BISHOP BROS., San Ramon, Contra Costa Co., Cal.

Don Adonis of Linda Vista.

BERKSHIRES—GUERNSEYS
Our BERKSHIRES are the finest in the State. At the last State Fair we entered in fourteen classes and won ten firsts.
Stock of all ages for sale.
GUERNSEYS—we offer for sale bull calves of A. R. breeding on both sides. Some by Don Adonis of Linda Vista, whose dam, two grand dams, and two great grand dams have an average record of 714 pounds butter-fat in one year.
GRAPEWILD FARM,
A. B. HUMPHRY, Owner,
Mayhews, Cal.

With the Live Stock Men.

The date for holding the conventions of the California State Dairy Association and the California Creamery Operator's conventions have been definitely fixed for October 14 and 15, at Modesto.

The Yolo county farm bureau has just issued a farm bulletin on hog cholera, which they are sending out to members of the bureau and others who write in for them. This, with one on grasshoppers, is the first bulletin to be issued in that county by the bureau.

The Alpine Evaporated Cream Company has recently purchased six additional acres near Gonzales, Monterey county, upon which they will erect additional buildings for their increasing business.

What is said to be one of the biggest shipments of cattle from Chico this year was eight carloads that was consigned to Oakland last week.

Instead of holding a consignment sale of all kinds of livestock, at Hanford, during October, as was originally planned, the promoters are now figuring on holding a sale composed entirely of registered Holsteins. Reports from that place state that breeders from all over the San Joaquin and Sacramento valleys will consign stock.

A dispatch from Winnemucca, states that sheep raising stands next to cattle production as a State industry in Nevada. It is claimed that there are nearly one and a half million sheep in the State, that there are about 550,000 slaughtered or shipped from the State yearly, and that the wool produced in the State will average 11,500,000 pounds annually.

According to reports from Yolo county, Dr. C. M. Fariss, of Sacramento, will improve his farm in that county by erecting the most modern kind of dairy buildings, and also installing on the ranch, herds of Guernsey and Holstein cattle from Wisconsin. Hugh D. Cameron, formerly tester for the Yolo county cow testing association, has been employed as superintendent.

Campaigns against hog cholera are being conducted in all parts of the United States, both by the government and state agricultural institutions. It is claimed that the annual loss through this disease is enormous in all parts of the country and that before our pork production can be materially increased, farmers will be compelled to eradicate the disease in their herds.

Cows sold at the Alexander auction sale, near Keyes, Stanislaus county, last week, averaged $90 each and heifers $43 each. Several Duroc Jersey sows with pigs at their side brought $65.

All kinds of meat are much higher at this time than at the same time last year in Chicago, and meat dealers are predicting unheard of prices for the future. The market is said to be still advancing.

M. H. Whittaker has completed a modern dairy barn and icing plant near Dixon, and will stock his ranch with dairy cows from the San Joaquin valley, where he is now in search of cows.

Collins Brothers of San Leandro are adding to their herd of grades on their ranch near that town, and state that they expect to sell inspected milk from now on. A trade has been worked up among the hospitals of San Francisco which will about consume all of their product. Mr. Collins informs us that he is having considerable difficulty in securing tuberculin-tested cows for their herd.

A carload of horses and a carload of hogs were shipped from Tulare to Los Angeles last week.

Work is progressing on the cattle, horse and hog building at the grounds of the Panama-Pacific Exposition, and the work on the poultry building is just being started. The heads of the live stock department state that they are very well pleased with the appearance of the buildings and believe they will rank well up in front with the other exposition buildings.

C. F. Daniels of Modesto reports that there are now 10 Hinman milking machine outfits in operation in Los Angeles county, and that he is finding the demand in all localities exceptionally good. He is planning on having a working demonstration at the Panama-Pacific Exposition next year.

The Brae Bourne ranch of Santa Rosa reports that they have recently sold one of their fine Collie dogs to G. E. Covell of San Francisco.

According to reports from El Centro, Imperial county, it is now practically assured that the Hemphill condensed milk factory will be erected at that place by January 1, as subscriptions for stock in the company have been coming in freely and it is believed that no further obstacles will be encountered.

Reports from all cattle raising sections are to the effect that the stock being shipped this year are in excellent condition, due to the bountiful feed which has grown on all ranges this year.

Ed Powers of Manteca, San Joaquin county, reports that the building for the new creamery at that place will be ready for occupancy shortly after August 1.

The Southern Pacific railroad is constructing new stock corrals at Chico, which will be as fine as any in the State, according to officials of that company.

C. G. McFarland, owner of the Willowwood Jersey farm at Tulare, writes that he has recently sold the cow, Ideal's Rose of St. Lambert, to E. M. Ward of Lancaster; Rioter's Willowwood Lad, to E. E. Ames of Tulare, and a young bull by General Grimm, to L. L. Black of Tulare.

The Eucalyptus farm near Willows, Glenn county, is to be turned into a 300-cow dairy. There are 300 acres in the ranch which are to be planted to alfalfa.

There was a good demand with light receipts of cattle at the Portland Union Stock Yards last week, prices being fully 25 cents higher on all grades. The top on steers was $7.25 to $7.30, cows and heifers moving freely at $6. Swine receipts were also light, but the outlet was broad and demand was urgent, prices rapidly climbing from $8.75 top, the first of the week, to $8.90 and $9 at the close. Sheep house receipts were light both in quantity and quality, most of the offerings being from western Oregon points. Prime wethers sold at $4.50 to $4.75, prime ewes $3.85 to $4, medium ewes $3.25 to $3.75, and spring lambs at $5.50 to $6.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder. "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

REGISTERED POLAND-CHINA HOGS —Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS — No better anywhere. Boars, sows, and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

FOR SALE—Young Berkshire sows and boars from registered stock. Brae Bourne Ranch, Route 3, Box 69, Santa Rosa, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

POLAND - CHINAS—Fifteen head 11 months gilts, open or bred, of prolific kind. Geo. V. Beckman, Lodi, Cal.

REGISTERED POLAND-CHINA SWINE —Prize winners, finest stock in State. $30 p. M. Bassett, Hanford.

DUROCS from first-prize winners State Fair, $15.00 up. Ed E. Johnson, Turlock, Cal.

MULEFOOT HOGS are best by any test. Jno. Dunlap, Box 416, Williamsport, Ohio.

PURE-BRED BERKSHIRE BOARS for sale; ready for service. H. M. Barngrover, San Jose, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE —Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

DUROC-JERSEY BOARS — Weanlings. Lindquist Bros., Turlock, Cal.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS — C. A. Stowe, Stockton, Cal.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

SHIRE HORSES—Stallions, mares and colts of the best breeding, both imported and home-bred, for sale at reasonable prices. Henry Wheatly, Salvador Stock Farm, Napa.

HEADQUARTERS FOR MULES, broke or unbroke. Mt. Diablo Park. Phone Danville 121, or Kearny 3670, San Francisco.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Shorthorns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa.— Registered Berkshire hogs and Jersey cattle.

DAIRY CATTLE.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

REGISTERED AND GRADE HOLSTEIN BULLS, from one to eighteen months old. Herd headed by Hartog Pontiac 48823-Rowena Maid Mutual 46304. Address Superintendent Whittier State School, Whittier, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warder herd bulls, both sired by $17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

ROYAL JERSEY HERD—Offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers & Merchants' National Bank.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars, J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS — Registered exclusively, Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

REG. HOLSTEINS—Bull calves, Juliana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS — A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE — Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE. McAlister & Son, Chino, Cal.

REGISTERED JERSEY BULL for sale; ready for service. H. M. Barngrover, San Jose, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS — Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

Hot Weather Poultry Notes.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

It does look as if our head lines might vary just a little by way of diversion, but the many calls for help that are coming in prove that the people need to be cautioned. It is better to be safe than sorry; and in a good many cases where people are sorry it is due to some little neglect that might have been attended to in a half hour or so. Poultry of all ages and sizes need plenty of shade these hot days, plenty of good clean cool drinking water and plenty of green succulent food. The grain feeding is a secondary matter when the weather is hot, because the chickens are like ourselves, the appetite is partially nil during the day.

Early feeding in the morning is the best, then they rest during the heat, provided they have shelter; and turn out again towards evening to feed and fill up ready for night.

SPOILED FOOD DANGEROUS.—Be careful about leaving feed around to spoil, or burying dead chickens in shallow graves. Many a case of limberneck comes from eating the maggots from dead carcasses. Fresh meat is not a very safe proposition now; and beef scrap will stand inspection. Only a short time ago the boy who does my work came to ask me to look at an old male bird which was acting queer. His head was wobbly as if he had been on a drunk, so I asked what he had been feeding him? He answered, "nothing," but that did not satisfy me, I said what did you feed him yesterday, did he have some of that green bone. Yes, the bird had been fed green bone that I had warned him not to feed without scalding, but he thought that would not hurt to feed it to big fellows like that.

I took the bird in and gave him a good ounce of olive oil, then put him under a tree in the shade, laid him down with his neck stretched out; and in about one hour took a washdish full of good warm water out and stood the bird in it up to his hocks. That with the oil, made a cure. But if that bird had been allowed to go another day he would have been a dead one. And it is these little things that cause all the worry in summer when the poultryman ought to be resting from his labors. Don't feed meat that is not sweet to any kind of poultry because it is not safe.

In California we are not troubled much with mouldy food in summer; but sometimes we buy grain, and pay a big price for it too, that is more or less smutty and mouldy. It is not wise to buy any grain that does not look bright and clean. Just now the new barley is coming in and it is good cheap wholesome feed. It pays to use the grain we can get cheapest, especially when it is new grain, for then we know it is clean and free from mould and smut.

BACTERIA IN MILK.—Milk, while worth its weight many times over to a poultryman, is also a source of danger if not fed right. When allowed to stand in the sun, bacteria form very rapidly; and if the drinking vessels are not kept strictly clean, the milk will do more harm than good. There is not anything that will smell worse than a dirty milk vessel; and if the chickens tip it over and tramp in it, there is no better source of disease. It is safer to put it on the stove and clabber it a little, use a good lump of sal soda in the water you wash the drinking vessels in, and throw fresh earth and a sprinkling of lime over the slop made by any spilled milk.

Also don't forget to give chickens that are being fed much milk, a little wood ashes in the mash feed once a week. This prevents worms; and as an ounce of prevention is better than a pound of cure it pays to prevent.

GARLIC FOR CHICKENS.—Garlic is odorous, yes and that very quality makes it a good thing to give to little chicks; it creates a good appetite so that chicks will eat better. I don't believe a chicken that is fed garlic regularly, say once a week, will ever take roup. Roup is due to a germ, and germs fight shy of garlic, they don't like its odor. This is the season for waste vegetables, utilize them for the chickens. If you don't want to cook them indoors, improvise a camp fire as I do with a few stray bricks, and put your kettle of vegetables over the fire made inside the bricks. Any old rubbish will boil a kettle on a hot day; mash the vegetables when done. Add a little salt and a little mill feed, not a great deal, but just enough to fool the chickens, and they make a good meal of it. It saves money that would go for grain, and is better.

To the Editor: Can anything be done to prevent chickens from brooding. R. I. R. chickens want to sit again after just raising a brood of chickens.—Supbscriber.

[No, not with that particular stock. R. I. Reds are very persistent, and the only thing you can do is to break them up every time they get broody. There are different methods of doing this, and the best I know of is to make a partition in the yard where the hens belong, set a can of water in and just let them alone. Give no feed, but feed the rest of the flock in plain sight of the broody ones and they soon get tired of being left out.

Broodiness can be bred out of chickens to a certain extent, but among the large breeds it can't be entirely killed out even if it were desirable to do so.

The way to breed it out of a flock is to hatch only the eggs laid soon after the hen has been broody. It is the first eggs after she has been broody, and the last few before she gets broody again that hatch chicks which make the most persistent sitters.

A few drops of aconite in the drinking water helps to cool the fever: for broodiness is a fever and a broody hen is no more fit to eat than is a pig about to have young fit for human consumption.

True both things are done, sometimes through ignorance and sometimes through greed, but both are wrong. Some time in the history of humanity we shall learn these things and change them, until we do we have to do the best we can individually to help spread the light.]

THE WORLD DO MOVE.

I remember a time when the world was greatly agitated about that connecting link of Darwin's, and whether man had formerly grown caudal appendages or not. And while we are or may be still in doubt about the tails, there is not a particle of doubt about the advance guard of one class of men usually called "nervy" having an extra large growth of "galls."

Quoting from a letter one of these "gally" men has written to the Editor of "Poultry Culture" I will leave readers to judge:

"I am prepared to write a letter, or article, that will be read by millions of people all over the world and that will add millions of dollars in profit to the poultry industry. I will tell how I determine the sex of chickens before the hens have even laid the eggs. The article will be the most val-

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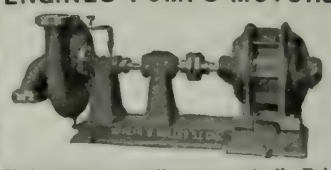

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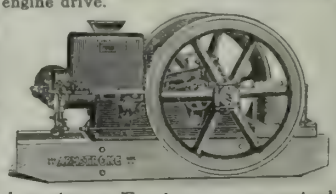

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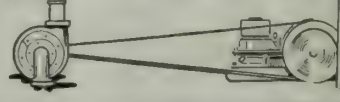

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Raising Calves without milk. Everything you need for stock and poultry raising. Write today.
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uable contribution to poultry literature of modern times, and can be made the means of more than doubling the circulation of any paper that prints it. I want $3000 for this article."

The Editor says, "I received this letter ten weeks ago, and it has taken me all that time to recover from the shock."

I don't wonder at that part of it; because editors, as a rule, don't carry so much loose change in their pockets, but it would have been a bigger shock if the man with the gall had caught the editor with the goods, and he had been so foolish as to separate himself from so much in the cause of "science."

Science is a great thing, but gall is greater, won't somebody kill this fellow in the name of humanity, for if ever he crosses the Rockies his gall will expand, and by the time he gets to California, he will have trebled the price and have power enough behind his wind jammer to influence some of our California editors and get the money. I would sure hate to see so much good California gold leave the State, even in the name of science.

Yes, sirree, the world moves, once in a while it has a real case of old fashioned sea-sickness, something like "Lassen" and there is something spilled over that takes cleaning up. I think this fellow must have had his birth in just such a case, hence he needs cleaning up and putting to work in some quiet institution where he can have time to hatch some more nice schemes to benefit the poultry people who don't know enough science to sit on the fence these hot days and swap lies with their neighbors.

COST OF POULTRY RATION.

A perfect ration for laying hens contains required food elements in approximately the right proportion, and in the forms most economical in the locality where the feeding is done. Professor James Dryden, of the Oregon Agricultural College, has prepared a list of five more or less exact rations for one laying hen for one year. The following ration No. 4, considered to be one of the best for most places in Oregon:

Material.	Pounds.	Cost.
Wheat	30	$0.45
Oats	10	.15
Bran	10	.12½
Corn	5	.10
Beef scrap	5	.20
Corn meal	5	.10
Linseed meal	5	.12½
Middlings	5	.07½
Shell	3	.03
Grit	3	.03
Charcoal	2	.05
Green food		.05
Total		$1.48½

The cost of the above ration is thought to be very close to the average. Most of the material, such as wheat, oats and corn, can be produced more cheaply on the farm and marketed more economically when converted into poultry products. Other material such as green food, charcoal, grit and shell or their substitutes, can be furnished from natural sources with but little cost. Often milk and other farm products can be substituted for some of the materials that otherwise would have to be bought. By a careful study of the given rations the poultryman will be able to supply the necessary food elements by substituting a more economical material. Of course the amounts should vary slightly with the difference in egg production and in size of fowls.

If it is to be conceded that the cost of maintaining a hen for one year is $1.50 the necessity of securing better than the average six dozen-egg hen is at once apparent. The yearly production of a good layer is about twice that number; and most of the increase represents a clear profit.

PANAMA-PACIFIC INTERNATIONAL EXPOSITION EGG-LAYING CONTEST.

The prime object to be attained in conducting the Panama-Pacific International Exposition Egg-Laking Contest is the permanent good to the country. The methods necessary in such contests are of direct value in their results to every poultryman of the community whether he be a participant or not. It is, of course, true that the man who participates in such a contest derives by far the greater and more direct benefit.

It has been shown conclusively through the contests conducted by the Missouri Experiment Station that the egg-laying capacity of any breed may be greatly increased through the methods necessary in such contests, and this particular station succeeded in more than doubling the egg production of a number of different breeds and varieties within four generations. This was accomplished by the careful methods, which include trap-nesting and the selection of birds from heavy producing parentage. Not only does the participant in such a contest gain great prestige and a reputation for his birds which will serve him as an advertisement for years to come, and not only does he stand a chance of winning prizes which in themselves have a value, but his gains are greatly enhanced by the methods of such a contest which enables him to select his breeding pullets from strains and varieties which are definitely known through official inspection to be heavy producers.

If such a contest should be as successful as others have been in this one particular, it would result directly in the greatly increased production of eggs, and, what is more important, by the increased producing power of the birds entered in this contest. These birds in their turns would become the parents of others of large producing power, and thus form an unbroken chain which would result in the larger profit and greater economy of the whole industry.

In the Panama-Pacific International Exposition Egg-Laying Contest the entrance fee was fixed at a figure which would insure quality in the birds and would tend to discourage the entrance of inferior ones. It should and will be a contest of ability in recognized breeds and varieties as well as the building of a foundation for still greater production in the future.

Entries are coming in at a satisfactory rate from widely separated countries. A considerable number of entries have been received from Great Britain, Australia and New Zealand, in addition to numerous entries from the states of the Union and the provinces of Canada. The indications now are that the number of entries will fully test the capacity of the building national Exposition Egg-Laying Contest.

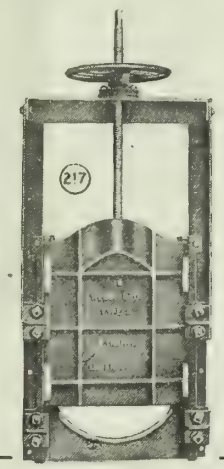
While not so specified in the rules, it is planned to admit a few pens of ducks in this contest as an added feature of interest. Pens which have been shipped from long distances will be allowed an extra bird with which to supply the place of any which may die or become incapacitated.

The building in which this contest will be conducted is located in the western portion of the Exposition area and is sheltered by the tree-crowned hills of the Presidio, thus affording an ideal place with plenty of sunshine and no disadvantages from the sea breezes.

It is urged that those who wish to enter this contest shall do so as early as convenient in order that places may be assured for all.

I. D. GRAHAM,
Assistant Chief, Department of Live Stock, Panama-Pacific International Exposition.
San Francisco.

Washington state will vote in November on a "universal 8-hour day" bill which permits 10 hours in caring for crops.



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Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

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Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion next November Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

FOR SALE—130 acres, well improved land, 40 acres peaches, 5 acres grapes, 17 acres almonds, good house and barns. Finest climate and best drinking water in county, also a 5250 gal. water tank. Located 2¼ miles south of Burson, Calaveras county, Cal. Address H. Pennington, Burson, Cal., Owner.

IMMEDIATE FORCED SALE—319 acres adjoining Middletown, Lake county; irrigation unnecessary; pear, alfalfa, corn, orchard land, timber pasture; fenced, buildings, springs, implements, crop, mare, cows; $9250, half cash. A. P. VAUGHN, Middletown.

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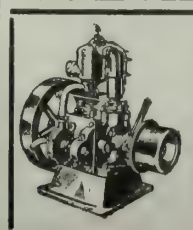

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Thomas R. Brown, Stockton, Cal.

The Home Circle.

Killing Ants in Field and House.

To the Editor: Can you tell me how to get rid of the tiny red ants which enter cupboards, coolers, etc. Our house is partly built of upright boards and they come up through the cracks on all sides.—R. J. B., Glenn, Cal.

To the Editor: I have an oak tree in my yard that is filled with red tree ants, I have put tar around the tree, but don't do any good. Can you tell what will kill them or keep them out of my house.—O. P. L., Marysville.

In the course of prolonged effort to check the progress of the Argentine ant, Prof. Woodworth and his assistants of the University Experiment Station commend the following as effective against all kinds of ants:

Destruction of Nests.—In all the species where there are large nests with a single opening the use of carbon bi-sulphide is by far the most satisfactory treatment. The plan is simply to pour down a few ounces of carbon bi-sulphide, either in the natural openings or in holes made by thrusting in a crowbar and covering everything with earth. The gas formed by the evaporation of the carbon bi-sulphide effectually destroys both young and old. This method can be applied to any species where the nest can be discovered, but in the case of the Argentine species it becomes the least valuable of any method, since the nests are usually scattered almost everywhere over the whole surface of the ground and the treatment to be effective would have to include the entire ground space for acres about the house one intends to protect.

There are conditions also which render the carbon bi-sulphide treatment insufficient. In our desert regions the soil becomes so dry and open that the gas formed by the evaporation of the carbon bi-sulphide dissipates itself so rapidly through the soil that it becomes practically impossible to destroy the whole nest. In these cases better results have been secured by the use of a solution of cyanide of potassium. This material has been used for several years in the parks at Denver as a secret preparation, and its efficiency was recently independently discovered by Mr. Woglum in Southern California. The method consists simply in making a rather strong solution of the cyanide salt in water and pouring it into the holes in the same way that carbon bi-sulphide is used, only very much more of the material is applied, the amount actually used of course depending on the size of the colony. Hydrocyanic gas is liberated in the soil by this means and operates very effectively against all ages.

Another method which we found effective and cheap and free from the disadvantage of using so violent a poison as potassium cyanide was to apply distillate made into a miscible oil and diluted with perhaps twenty times its volume of water. To be thoroughly effective this must be applied very liberally, soaking the ground well with the mixture. When this is done it seems quite as effective as any other method.

Ant Powders.—The most efficient powder is the comon Persian insect powder (pyrethrum), often sold under various names as indicating its availability for use against ants. When this is applied liberally on the shelves in the pantry and around the edges of the room, it sometimes will keep the insects away for several days when it must be repeated. Some housewives have had very good results by putting out the powder just after sweeping in the morning and leaving it about until the next day, when the old powder is swept up and fresh material applied. It is rather an expensive manner of treating ants, because it must be kept up continuously, but were there no better methods available it would certainly be better than to allow the ants to have continued access to the premises, and there may be times when it may be worth while.

Ant Fluids.—A very common form of ant remedy for sale in the drug stores consists in an alcoholic solution of corrosive sublimate, usually colored by some coloring matter to disguise the nature of the preparation. Any preparation with a strong odor of alcohol is quite certain to be of this character. The method of applying is to paint the material about on the shelves; it immediately dries up but leaves the fine crystals of corrosive sublimate which seems quite deterent for most species of ants. The Argentine ant seems to be very little influenced by this poison, and in many experiments tried at the ant laboratory lines of ants were found re-established across the poison inside half an hour of the most liberal treatment. Very good results have followed the use of this material against Tapinoma, which is often mistaken for the Argentine ant, and even in the case of the Argentine sometimes temporary relief is secured where there is nothing particularly attractive to the ants beyond the barrier.

Arsenical Poisoning.—We obtained by far the best results by the use of a very weak solution of arsenic and syrup. Most of the commercial ant poisons commonly known as ant pastes consist of arsenic and syrup, but are made very strong in arsenic. This kills the foraging ants almost immediately. We found by reducing the arsenic to between one-fourth and one-eighth of one per cent they would take large quantities of the material to their nests and feed it to the young, and the whole nest would be killed by a slow poisoning.

The most convenient way of exposing the poison to the ants is to use a large jar with a perforated cover and within it place a sponge saturated with the arsenic solution. The ants will enter through the perforations in the cover, fill themslves with the arsenic solution and carry it to their nests. The sponge will hold enough poison to require two or three weeks to empty it, and before that time the ants will almost entirely disappear.

The number of jars to use will depend upon the abundance of ants. In the worst cases a half-dozen jars will serve for an ordinary sized house and lot, and if the ants are not very bad one jar may be enough, in such cases it is well to place it in the pantry or kitchen.

The same remedy can be used for all the native species of ants and will be more effective against them because they are easier to destroy than the Argentine ant.

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Our Young Folks

In Nightmare's Grip.

A SUMMER PERIL THAT BESETS THE HERDS AT PASTURE.

The high tide of the day was at hand. In another few minutes it would turn. An the sun possessed the land.

All across the big grass field where the parties of young starlings dropped to feed, and vanished like diving birds into a green sea, it played in shimmering heat haze.

It flashed from the chestnut and white cattle quietly feeding; it flashed from the white rumps and breasts of the sweeping, swerving house-martins; it danced in a hundred sparks of every rainbow hue off the wings of the glancing, darting flies.

All the field was drowsy, it seemed, and even though pestered by a swarm of flies, the slow, contented cattle merely swished their long tails, or flapped their mobile ears.

OF SOMETHING INVISIBLE.—Then, quite suddenly, one old cow, she who carried some nasty tumors on her back, flung up her head. She stood motionless, erect, "frozen" in her place—at gaze.

A pause followed; then every head went up, each beast stricken in its place.

The old cow who had first given the alarm—and, seemingly, passed it to the others through her body—turned her head and slowly, here and there, there and here, her big, bulging eyes, full now of terror, followed the movements of something invisible.

It was an uncanny sight to watch—that old beast first, then the others, erect, still all but their heads, big ars thrown forward listening to, and big eyes watching, a thing you couldn't see.

That it was moving rapidly, that thing, you could tell by watching the eyes of the cattle. That it—— Ah! Above the hum of the insects that formed a background, as it were, of sound, there came a hum, a peculiarly insistent, penetrating hum that arrested attention at once. You could not mistake it. Nor could the cattle.

A PORTENT OF EVIL.—And then, in an instant, whirring, whirling, the hum was amongst them.

Certainly it was a hum, though a peculiar one; but if it had been the report of an 18-pounder quickly fired in their midst, it could have no more startling effect.

Instantly every cow curled her tail above her back in a peculiar and unmistakable manner, which I never remember seeing adopted in any other circumstances, and fled to all points of the compass—scattered at full gallop through the heat-haze and the hot sun like things possessed.

One fine brown young cow in particular seemed as though ridden by a fiend. She was not; but a big, brownish, hornet-like fly was chasing her, and doing its best, apparently, to ride her. And from that fly's wings came the peculiar hum that spread terror beyond expression in words.

Anon, the cow was such a racer that the fly gave up the chase. It swerved. It whirred away across the field where the cattle stood dotted everywhere. The young cow pulled up.

You behold it, as it were, a portent of evil dancing in the sun, approaching another cow. She gave one glare of horror, spun with amazing agility, curled her tail in that same odd way, and jumped into full gallop at once.

ASK THE OLD COW.—Away they went, fly and cow, sweeping over the luscious, long grass with a rush that put up the young starlings in squawking, amazed companies, and set even the sedate rooks on wing.

Past the old cow with the tumors they shot. She, wise thing, "froze" motionless in her tracks where she stood, hoping against hope to avoid discovery—and then, in a flash, the fly was on the cow's back.

It did not stay there long. It did not bite. It did not sting. It did not hurt. It did not do anything to harm her then.

Only, when it was gone, when it rose and flew away and peace settled once again upon the field, you would have seen, if the cow had let you use a magnifying-glass, that the fly had laid its eggs upon the beast's back, and they would hatch into maggots, and the maggots would burrow under the skin, and——

Well, ask the old cow with the tumors. She had those lifelong mementoes to show that she had for a few seconds once been the steed of the nightmare gad-fly at high noon.—Answers.

Little Rollo had been reproved for his table manners by papa and mamma. He trained his baby stare on mamma to ask: "When you was a little girl didn't y'ever dip your jelly roll in coffee?" "No, my dear," with a tinge of acerbity. "Y'ot to try it. Gee, it's great!"—Buffalo Express.

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1 Pair Blankets	$6.00
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1 Bed Spread	2.50
1 Doz. Towels	1.80
½ Doz. Bath Towels	1.50
2 Yds. Table Cloth	3.00
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2 18x54 Dresser Scraf	1.00
6 Sheets	4.50
6 Pillow Cases	1.20
TOTAL RETAIL VALUE	$30.00

We pay all freight or express charges. We guarantee every article to be as represented and usually sold at above prices. You SAVE one-third. If you don't want whole list, select what you wish, and deduct 25%. Express charges paid on all orders of $5 or over. If you are not satisfied this is the best bargain you ever bought, return the goods and your money will be refunded. Reference: German American Trust & Savings Bank, R. G. Dun & Co., Bradstreet's.

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Standard Oil Company
(California)
FOR BEST RESULTS USE PEARL OIL

THE MARKETS.

San Francisco, July 29, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The European war has caused great excitement in primary markets, with some advance in prices; but the local spot market has not been noticeably affected as yet. In fact, there is a feeling of weakness, owing to increased offerings of new grain for August delivery at about $1 per ton below the spot figures.

California Club, ctl....	$1.57½@1.62½
Forty-fold	1.57½@1.60
Northern Club	1.57½@1.62½
Northern Bluestem ...	1.60 @1.62½
Northern Red	1.52½@1.60

BARLEY.

The speculative market has been very dull for the last few days, and spot barley is quiet in the local market, business being mostly of a small jobbing nature. There is an active export movement from the interior, however, with prices for brewing and shipping grades about as before.

Brewing and Shipping.	$1.00 @1.05
Choice Feed, per ctl....	0.97½@1.00
Common Feed	Nominal

OATS.

A few offerings of new white oats are appearing and the market is a little easier, with no strong demand. There has lately been some inquiry for red seed, which is offered at the quotations below.

Red Feed	$1.00 @1.10
Seed	1.17½@1.25
Gray	Nominal
White	1.22½@1.27½
Black Seed	Nominal

CORN.

Values remain as before, with no local movement of much importance. Eastern white is very scarce. Some Manchurian corn is expected, but there is some doubt about the quality. A large lot which arrived recently at Seattle will have to be ground for feed.

California Yellow	Nominal
Eastern Yellow	$1.82½@1.85
Eastern White	Nominal
Egyptian	1.80 @1.85
Milo Maize	1.80 @1.85

RYE.

This grain receives little interest, and prices are practically nominal, although there is a little offering at the old quotaions.

Rye, per ctl.	$1.50 @1.60

BEANS.

Nothing new has developed in most lines, stocks being pretty well sold out, with a fair demand for shipment. The clean-up in limas and pinks, however, has been very close, and the demand is sufficient to bring about a further advance in both lines. The stock of limas left in the State is said to be only five or six cars, which is expected to find a market at extreme prices. There is a very heavy demand for future beans in the East, and with a bare market the early shipments are likely to bring very good prices.

(On wharf.)

Bayos: Cal., per ctl....	$7.00 @7.50
Mexican	4.50 @5.00
Blackeyes	7.75 @8.00
Cranberry Beans	4.25 @6.00
Horse Beans	1.90 @2.15
Small Whites	5.00 @5.25
Large Whites	3.90 @4.50
Limas	7.00
Pea	4.25 @4.50
Pink	4.10 @4.20
Red Kidneys	Nominal
Mexican Red	6.50 @6.75

SEEDS.

The seed market is passing through the usual midsummer stagnation, values for the present being little more than nominal, though supplies are sufficient to meet all current needs.

Alfalfa	12½@15 c
Brown Mustard, per lb....	3¾c
Canary	7 @ 7½c
Hemp	2½@ 3 c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Values are unchanged. There is little feature to the local trade, the movement being rather light.
some weakening of prices during the fall.

Cal. Family Extras....	$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

Arrivals are increasing again, and it is as hard as ever to dispose of the current offerings. Dealers and consumers are still holding off, in the belief that prices will be lower during the fall, when there will be a general effort to clean up the hay in the fields. Large offerings are reported in various districts where growers are endeavoring to dispose of round lots, but little business is being done for shipment in this direction. A little export business is reported, and this should be a factor of some importance at the present range of prices.

No. 1 Wheat, or Wheat and Oats	$ 9.50@10.00
do No. 2	7.00@ 9.00
Barley	6.00@ 8.00
Tame Oats	7.00@11.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.50
Stock Hay	5.00@ 6.00
Straw, per bale.....	40@ 55c

FEEDSTUFFS.

Alfalfa meal is a little lower, owing to the abundance of alfalfa hay, which is being ground in large quantities. Oilcake meal is out of the market at present. In other lines values stand as before, the demand being rather light, while supplies are steadily held.

Alfalfa meal, per ton....	$16.00@17.00
Bran, per ton.....	25.50@26.50
Oilcake Meal	Nominal
Cocoanut Cake or Meal..	26.00@27.00
Cracked Corn	41.00@42.00
Middlings	32.00@33.00
Rolled Barley	21.50@22.00
Rolled Oats	28.00@29.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

The local vegetable market shows little activity this week, and with excessive offerings in several lines there is a downward tendency in prices. The greatest drop has been in tomatoes, which will hardly bring over 30c in lugs at present, large lots going to the canners at 20c. Delta stock has driven most other lines from the market, and is arriving in large quantities. Green peppers have also taken quite a drop, though in good demand as now quoted. Cucumbers and eggplant are rather easy at the former figures, and summer squash is considerably lower. Green peas and lima beans are lower, string beans showing a slight advance. Green corn is still coming in freely, and the top price has been marked down.

Cauliflower, dozen	40@ 70c
Green Peppers lugs.....	35@ 50c
Carrots, per sack.....	35@ 50c
Green Peas, lb.....	1½@ 3½c
Tomatoes: Delta, lugs...	15@ 30c
Delta, lugs	70c@ 1.50
Beans: Wax	3@ 4½c
String	3@ 4½c
Lima Beans, lb.....	3@ 4c
Cucumbers, lugs	35@ 50c
Eggplant, lugs	50@ 65c
Green Corn, sack.....	75c@ 1.75
Summer Squash, box.....	25@ 35c
Cream Squash, box.....	35@ 50c
Okra, box	50c

POTATOES AND ONIONS.

New potatoes, sweets, and garlic are keeping up to the former level, but the ordinary run of Delta potatoes and onions is much easier, with a sharp curtailment of the shipping demand and a drop in up-river quotations. Onions are about 50c lower, and the drop in potatoes amounts to 10 or 15c.

Potatoes:	
River Burbanks	85c@$1.10
New Potatoes, lb.....	1@ 1½c
Sweet Potatoes, lb.....	5@ 6c
Onions: New Yellow, sack	1.50@ 1.85
Garlic, new, per lb.....	5@ 8c

Dairy Produce.

POULTRY.

The local market is in poor shape. Arrivals of both local and Eastern stock have been fully up to the recent average, and the demand has been extremely slow, leaving considerable stock on hand from day to day. Hens and young stock are all 1c lower, roosters dropping about 3 cents.

Large Broilers	18 @19 c
Small Broilers, per lb...	18 @19 c
Fryers, per lb.....	19 @20 c
Hens, extra, per lb.....	16 @17 c
Hens, large, per lb.....	16 c
Small Hens, per lb.....	15 @16 c
Young Roosters, per lb..	20 @21 c
Squabs, per doz.	1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00

BUTTER.

The butter trade is still dragging. Extras, which were lower for several days, have again gone to 24c, while lower grades show a decline. Offerings from nearby points are quite heavy, and the north has considerable surplus to ship this way.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	23	23½	23½	24	24	24
Prime Firsts ..	22½	23	23	23	23	23
Firsts	22	22	22	22	22	22

EGGS.

It has become impossible to hold eggs at the figure established a week ago, and extras are now 1½c lower, falling 2½c behind last year's figure. Supplies are coming in freely, and the demand is very moderate.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	29½	29½	28½	29	29	28½
Firsts ...	25½	25½	25½	25½	25½	25½
Selected Pullets..	24½	24½	24½	24½	24½	24

CHEESE.

All lines remain at the same level as last week, but there is a feeling of easiness, with rather large supplies and a limited movement.

Fancy California Flats, per lb...	14 c
New Young Americas, fancy.....	15 c
Monterey Cheese	13@14 c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter: Extras..	26	24	24	24	24	24
Eggs	29	30	30	30	30	30
Cal. Cheese: Flats ..	13	13	13	13	13	13

Deciduous Fruit.

Nearly all descriptions are arriving freely in the local market, and the general demand has not been up to expectations. Stocks of early apples are beginning to accumulate and Gravensteins are slightly lower. Red nectarines are selling up to $1, the white variety remaining at the former figure, and apricots are in fair demand at the former range. Pears show a narrower range, the top figure being $1.65, while No. 2 fruit is offered at 50c to $1. Peaches in small packages hold up fairly well, but shipments in lugs are large, causing extremely low prices. Plums also are lower in large packages, while prunes are still held for fairly good prices. Blackberries are in excessive supply and very cheap, while receipts of raspberries are lighter and prices have been advanced rather sharply. Strawberries show a wide range, some offerings being lower, while especially attractive lots sell readily at an advance. Watermelons are steady as last quoted, but cantaloupes are lower. Shipments in this line have been large from several districts, and a large amount has arrived in unsalable condition.

Huckleberries, lb.	10@12½c
Blackberries, chest	$ 1.25@ 2.00
Raspberries, chest	5.00@ 7.00
Strawberries, chest	1.75@ 3.50
Apples, New Crop:	
Astrakhans, box	50@ 1.00
Alexanuers	50@ 85c
Gravenstein	50c@ 1.15
Crabapples	50c@ 1.00
Nectarines, crate	50c@ 1.00
Apricots, crate	50@ 75c
do lugs	75c@ 1.25
Pears, box, large.....	1.35@ 1.65
Peaches, crate	25@ 40c
do lugs	25@ 50c
Plums, crate	25@ 40c
do lugs	30@ 75c
Prunes, lugs	75c@ 1.25
Figs: Black, single layer	75@ 90c
Cantaloupes, crate	75@ 90c
Watermelons, doz.....	1.25@ 2.00
Casabas, lugs	$ 1.00@ 1.25
Grapes, crate	50c@ 1.00
do lugs	75c@ 1.25

Dried Fruits.

Evaporated apples are quoted a little lower, as the outlook for production shows some improvement. Prices in other lines stand as before, and business is said to be rather quiet. There is still considerable buying in the country, but the distributing trade through the East is taking hold very slowly, and unless outside business picks up the local movement may be retarded. Packers say that the Servian war has not affected the prune situation, but there is apparently every prospect that the harvest in that district, which is an important factor in the prune market, will be seriously interrupted, and this should give some strength to the market on this side. A rather easy feeling is reported in both peaches and apricots in the Eastern markets, as the demand is light at present and crops in both lines are running ahead of expectations. The New York Journal of Commerce says:

"In the opinion of leading operators, never before in the history of the business has there been such complete stagnation in the dried fruit market, for a like period, as during the past ten days. Brokers complain that they find it almost impossible to interest buyers in anything they have to offer for forward shipment out of 1913 or 1914 crops. This condition is not peculiar to New York territory, judging by reports from California which are to the effect that there is very little call for anything on the list. Europe is not buying prunes, as the low prices quoted on Bosnia and Servia stock is diverting European buyers' attention to the latter. While prices on that fruit do not seem to be definitely established as yet, from such information as has been received they appear to run at least a cent a pound under the quotations on California prunes, laid down on the other side.

"Apricots are inactive, as are also peaches, with prices for the latter irregular and rather easy. New crop peaches offer for September shipment from the Coast at 4½c for standard, 4½c for choice, 4¾c for extra choice, and 5¼c for fancy, f.o.b. Coast, in 50-lb. boxes.

"The Eastern trade is still holding off for concessions on August-September old crop seeded raisins, but the Associated Company emphatically refuses to permit any shading of prices through splitting of commissions or extra discounts. New crop continues to offer from packers outside of the company at 6⅜c for choice and 6¾c for fancy seeded in one-pound cartons for October shipment.

Evap. Apples, 1914	5 @ 6 c
Apricots, 1914	8½@ 9 c
Figs: White, 1914.....	3c
Black	2 @ 2½c
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	5¾@ 6½c
Peaches, new	3½@ 4 c
Pears	8 @ 9 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@ 4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

As pointed out two weeks ago in this report the Valencia market now being in very good shape, good stock Valencias are meeting with ready sale at good prices, but it is evident that the markets will not stand up under heavy supplies at this time, owing to heavy arrivals of local summer fruits. Should supplies of Valencias become much heavier, it is the opinion of the trade in general that much lower prices would result. The Western markets are taking practically all shipments of California lemons at this time, the markets there being quite strong, prices ranging from $5 to $5.50.

Foreign lemons are still having a demoralizing influence on the Eastern markets, most of the shipments arriv-

ing in a miserable condition and selling low, the wasty lots bringing down the average on some cargoes to from $1.10 to $.125 per box. Twenty-seven cars of Valencia oranges auctioned in New York on July 27 averaged from $2.45 to $4. In Boston the average was $2.70 to $3.90, with Philadelphia and Cleveland averaging about the same. The prices realized in St. Louis on Valencias averaged slightly lower.

In San Francisco there is no special activity in the local market, and current arrivals are ample for all requirements. Prices hold steady in most lines, but the smaller sizes of valencia oranges are in rather excessive supply and are quoted a little lower.

Oranges: Valencias, box	$ 1.50@ 2.50
Med. Sweets, box	1.00@ 1.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.00@ 2.50
Lemons, box	2.75@ 5.50
Limes, case	4.00@ 5.50

Nuts, Honey, Hops, Etc.

New prices on almonds are expected in the near future, but for the present there is no movement of any interest. Walnuts remain nominal. A few odd lots of off-grade nuts are being cleaned out by the southern associations, but there is not enough moving to quote.

Almonds, 1914 crop:	
Nonpareils	17 c
I X L	16 c
Ne Plus Ultra	15 c
Drakes	13 c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

The local market is quiet and rather easy, with abundant supplies and liberal offerings in the country. According to reports from some outside points the prices received by beemen are unusually low.

Comb: White	13 @14 c
Amber	10 @11 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

There is not much business locally, but prices are well maintained, with a good demand in the East for all offerings.

Light	31 @32½c
Dark	30 c

HOPS.

The market is rather unsettled at present, both growers and buyers being anxious to wait until the crop is better known. A recent sale of 1913 hops near Sacramento is reported at 13½c, but most growers who have any left are holding for better prices.

1913 crop	13½@15 c
1914 crop	14 @15½c

Live Stock.

Beef cattle, sheep and lambs have all been marked down in the local market, as supplies are coming in more freely than for some time past. It is reported that Eastern prices are above the local level, and this has caused some California cattle to be shipped East. Dressed hogs are slightly higher.

Steers: No. 1	6½@ 6¾c
No. 2	6¼@ 6½c
Cows and Heifers: No. 1	5¾@ 6 c
No. 2	5¼@ 5½c
Bulls and Stags	2½@ 4½c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¾@ 9 c
100 to 150 lbs	8½@ 8¾c
Prime Wethers	5 @ 5½c
Ewes	4 @ 4½c
Milk Lambs	6½@ 7½c

DRESSED MEATS.

Steers	10½@11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	11½@12½c
Ewes	11 @11½c
Suckling Lambs	14½@15 c
Dressed Hogs	15 c

WOOL.

So far no business worth mentioning has been done in the San Joaquin, but fall shearing has been started, and sales are expected soon. Buyers are offering about the prices quoted below. The Eastern market is reported in good shape.

Fall clip:	
San Joaquin	7@ 9c

HIDES.

No change has been made in country hide prices. The movement is not exceptionally heavy, but supplies continue light, and all offerings are readily absorbed.

Heavy Steers, over 56 lbs.	15 @15½c
Medium	15 @15½c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb.	15 @15½c
Light Cows, 30 to 50 lb.	14½@15 c
Kip	15½@16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	25½@26½c
Dry Kip, 10 to 15	24½@25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

Country shippers are still inclined to hold off from this market, as there is no evidence of strong demand for general offerings, and it is doubtful if any large shipments could be readily disposed of at satisfactory prices. A few horses, however, are being sold all the time at about the range quoted, and there is still considerable demand at outside points.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

SPECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., July 27, 1914.

The week just past has been the busiest since the season opened, the Southern Pacific railroad alone handling approximately 150 cars a day, mostly peaches.

Placer county Elbertas were of excellent quality this season, and the demand was for peaches from this section. Valley Elbertas were of better quality this year than for several seasons past, but the hill fruit has the preference and shippers have been able to ask from 5 to 7½c more as a result.

On account of the fact that the movement of peaches from the lower San Joaquin valley was in excess of what was originally anticipated when the season opened, the market has taken a sharp decline and it is not unlikely that several cars of valley peaches will have to be sold at 60c delivered.

Bartlett pears on the Sacramento river are fast cleaning up, as the canners are now demanding that their contracts be filled at this time. The shipping season should close on the Sacramento river by the last of this week.

Pears are now moving from the hill and mountain districts. As the quality is exceptional and the fruit running to good sizes, we look for a firm market for the balance of the season.

There has been an upward tendency on plums and especially of the blue varieties, several cars averaging from $2 to $2.25 a crate.

The grape season in the Imperial and Coachella valleys will end this week and shipment of Malagas and Thompson Seedless from the lower San Joaquin, known as the Fresno district, will begin today. It is estimated that the tonnage of Malagas will exceed last season by from 600 to 700 cars. An effort will be made on the part of all the shippers to regulate shipments into the various auction markets to avoid as far as possible gluts that heretofore have proven disastrous to the interests. The weather the past ten days has been favorable to the growing of Tokays and the reduction of mildew which in some districts has already done considerable damage.

Tokays should move from the upper San Joaquin districts about August 20. As this has been an exceptional season insofar as the time of ripening of tree fruits is concerned, there will be practically nothing to move from the State after August 20 except grapes, and as some of the Eastern States predict an early season, the field should be fairly clear for our Tokays and Malagas, although, even with these favorable conditions, we do not predict more than normal results, and extreme caution and care should be given to the quality and pack.

It is already reported that the grape juice factories of the East are offering $35 per ton for certain varieties that can be used in the manufacture of this beverage. We also anticipate that considerable grapes will be put into consumption in this manner which otherwise would be thrown upon the market for table purposes.

The markets for the past week ranged as follows:

New York—Wickson, $1.30 to $1.45; Bartletts, $1.85 to $2.25; Burbanks, $1.20 to $1.40; G. Duke, $1.55 to $1.60; Elbertas, 75c; Kelsey, $1.40 to $1.70; Eureka, $1.70; Sugar, $1.35 to $1.40; Giants, $1.15; Germans, $1.30 to $1.60; Crawford, 63c to 75c; Tuscans, $1.02 to $1.85; Diamonds, $1.25 to $1.75; Malagas, $1 to $2.25; Bradshaw, $1.06 to $1.15.

Chicago—Wickson, $1 to $1.40; Bartletts, $1.60 to $2.15; Burbanks, $1 to $1.65; G. Duke, $1.40 to $1.60; Kelsey, $1 to $1.30; Sugar, $1.15 to $1.30; Giants, $1.10 to $1.35; Elbertas, $1 to 60c; Crawford, 40c to 85c; Tuscans, 57c to 1.75; Diamonds, $1.40 to $1.60; Thompson Seedless, $1.10 to $1.50; Malagas, $1.20 to $1.70; Bradshaw, $1.20.

Minneapolis—Wickson, 85c to $1.15; Tragedy, $1.20 to $1.25; Bartletts, $1.70 to $2.50; Burbanks, 90c; G. Duke, $1.20 to $1.75; Kelsey, 75c to 90c; Sugar, $1.10 to $1.60; Giants, $1 to $1.80; Satsuma, $1.15; Crawford, 35c to $1.20; Tuscans, 55c to 60c; Diamonds, $1.25 to $1.85; Thompson Seedless, $2 to $2.10; Malagas, $2.25 to $2.35.

Boston—Wickson, $1.10 to $1.45; Tragedy, $1.60 to $2.35; Bartletts, $1.65 to $2.85; St. John, 30c to 45c; Santa Rosa, 75c to $1.35; Climax, $1.10; Decker, 70c; Clyman, $1.70; Kelsey, 75c to $1.80; Elbertas, $1.05 to $1.10; Eureka, $1.60 to $2; Sugar, $1.55 to $1.75; Giants, $1.20 to $1.65; Maynard, 85c to $1; German, $1 to $1.70; Simoni, 90c; Crawford, 40c to 90c; Diamonds, $1.85 to $2.30; Malagas, $1.75 to $2.15; Bradshaw, $1.05 to $1.15.

Philadelphia — Wickson, $1.35 to $1.40; Bartletts, $1.40 to $2; Burbanks, $1.20; Kelsey, $1.55; Sugar, $1; German, $1.30 to $1.75; Triumph, 50c; Tuscans, $1.45; Diamonds, $1.40 to $1.60; Malagas, $1.15 to $1.75.

The total shipments for this season to date have reached 4856 carloads, as against 3688 carloads to the same date last year.

"What's Wombat working on now?"

"Oh, he says that ladies' shoes are not sufficiently complicated to be in keeping with the rest of the attire. So he's working on a woman's shoe that buttons up the back!"

SPRUCE BOXES LUMBER
FRUIT, CANNERY, BUTTER
AND ALL OTHER KINDS
PACIFIC BOX FACTORY
353 BEACH ST. SAN FRANCISCO, CALIF.
OPERATING OWN LOGGING CAMPS AND MILLS

GAS ENGINES

If you want a heavy-duty distillate engine, a postal will bring you valuable information that will save you money.

We give you agents' prices.

T. W. HOBRON CO.,
68 Post St., San Francisco.

MAKE THE TRIP
In Less Time
BETWEEN
Sacramento
AND
Oakland-San Francisco
FAST ELECTRIC TRAINS
Clean—Comfortable—Convenient.
Baggage carried on all trains.
Trains arrive and depart from Key Route Ferry.
SAN FRANCISCO, OAKLAND, ANTIOCH & EASTERN RY.

PUBLISHER'S DEPARTMENT.

One of our best subscription field men got busy last week and sent us no less than 66 new subscribers. These, added to those received through other sources, brought the total number of new names to receive this week's issue to 201. Be it understood that all these new readers are engaged in some branch of farming.

"Received the book. Well pleased. Thanks. D. J. Flett, Martinez, Cal."

That was the brief acknowledgment of a copy of "One Thousand Questions in California Agriculture Answered." The writer did not use many words, but they were just as eloquent and full of meaning as a three-page letter. By the way, have you sent for our special offer to subscribers on this book? It will pay you to do so.

Readers interested in dairy supplies are referred to the new location mentioned in the ad of the Guy F. Kelsey Co. This firm has taken the agency for Sharples milking machines for southern California and is evidently in need of more space than was available at 108 E. 8th St., Los Angeles.

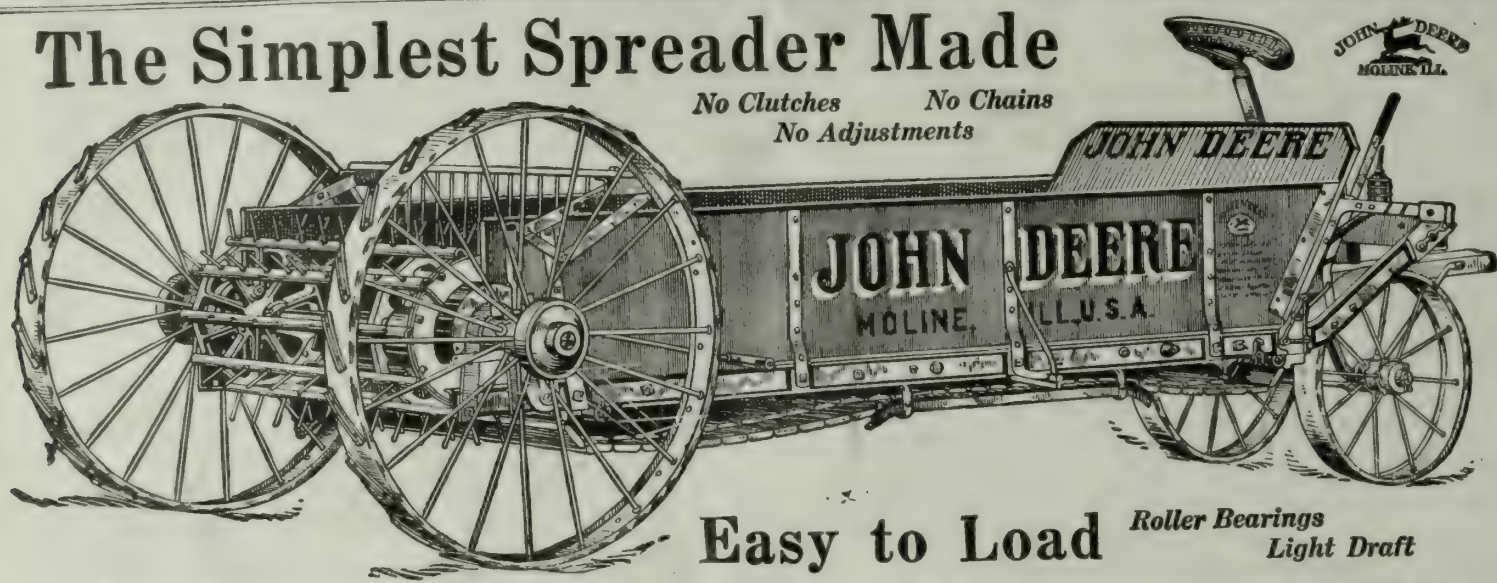
John Deere Spreader

The Spreader with the Beater on the Axle

Order Early — Thousands Sold for Quick Delivery — Two Sizes

The Simplest Spreader Made

No Clutches *No Chains*
No Adjustments



Easy to Load

Roller Bearings
Light Draft

Decided Improvement in Spreader Construction

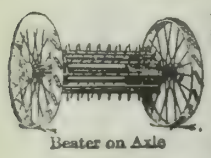
Up to this time every spreader on the market has been constructed along the same general lines.

The John Deere Spreader, however, is different. It is entirely new and there is nothing else like it on the market.

All the working parts are mounted on the main axle. There are no strains and stresses on the sides of frame and no clutches or chains to give trouble.

The John Deere Spreader is low down, easy to load, very simple, and always ready for business. It cannot get out of order.

Beater on Axle

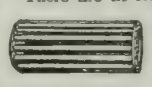

Beater on Axle

All working parts on the John Deere Spreader are mounted on the rear axle. There are no independent studs or shafts to give trouble, nor chains or sets of gears to get out of order. All strains and stresses are borne by the main axle and are not transmitted to the side of the box or the frame of the spreader.

Power to drive the beater is taken from the rear axle and operates through a planetary transmission (similar to that used on automobiles) mounted on the rear axle within the beater.

Light Draft—Few Parts

There are at least two reasons why the John Deere Spreader is the lightest draft spreader made. One is that it has four sets of roller bearings—two in the front wheels and two on the main axle and beater. They reduce the draft materially.

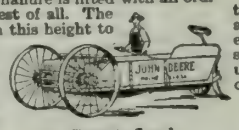

Roller Bearing

Another reason is that the John Deere Spreader has so few parts. It has about 150 less types of castings than the simplest spreader heretofore made. It is only natural that the fewer parts a machine has, the easier it will operate.

When the John Deere Spreader is out of gear, it is simply a wagon.

Easy to Load

The first three feet manure is lifted with an ordinary spreader are easiest of all. The real hard work is from this height to the top of the ordinary spreader.


Easy to Load

The John Deere Spreader is low down. It is only necessary to lift each forkful three feet. Thus, the hard work of loading a manure spreader is done away with.

Besides, the person doing the loading can see inside the spreader at all times. Each forkful is placed exactly where it is needed.

No Adjustments

On the John Deere Spreader no adjustments are necessary. On the simplest spreader heretofore made, it was always necessary to make from ten to twenty adjustments before the machine would work at all.

John Deere Spreader is thrown in gear by moving a heavy dog back until it engages a stop at the rear of the machine. No clutch used.

Out of Gear

Positive Non-Racing Apron

By the use of a very simple locking device inside the ratchet feed, the apron is positively locked against racing when spreading up hill or over exceedingly rough ground. The result is that when spreading with the John Deere Spreader, the manure is always spread evenly. This is not possible on any other ratchet feed spreader made.

Change of Feed

Change of feed is accomplished by a double shoe which is removed from the seat. This shoe determines the number of teeth the ratchets engage at each stroke. The John Deere Spreader has a variation of from five to twenty-five loads to the acre.

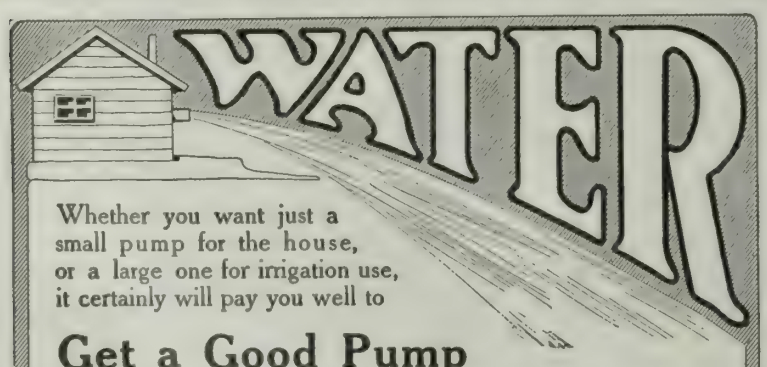
Substantial Steel Frame, Like the Modern Railway Bridge

Both the side sills in the John Deere Spreader are of high carbon channel steel with the channels turned to the inside. Into these hollows are fitted four large wooden cross sills. Being bolted, these cross sills can be kept tight, insuring rigidity and alignment of frame at all times.

Built Like a Steel Bridge

Even if You Don't Need a New Spreader Now—Come in and See It

Ask Your Implement Dealer About it or Write to JOHN DEERE PLOW CO., San Francisco, Cal.



Whether you want just a small pump for the house, or a large one for irrigation use, it certainly will pay you well to

Get a Good Pump

The safe way is to get advice from pump specialists like ourselves. As manufacturers we have solved hundreds of pumping problems—and our accumulated experience is at your command. Our advice may save you both money and trouble. We manufacture and sell

Horizontal and Vertical Centrifugal Pumps
Deep Well Pumps, Windmill Pumps, Etc.

THE BEAN IS THE BEE-N TRADE MARK BEST

Let us help you select a pump adapted to your particular requirements. CATALOG 28-B describes Bean Centrifugal Pumps. CATALOG 28-D describes all other pumps (also Bean Distillate Engines). A postal will bring either or both. Why not send now?

BEAN SPRAY PUMP CO.

211 W. Julian Street — San Jose, Cal.

One Thousand Questions in California Agriculture Answered

By EDWARD J. WICKSON, A. M.

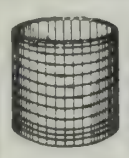
Is made up of questions asked the **PACIFIC RURAL PRESS** by actual farmers and answered by Prof. Wickson. These queries and replies make a book of nearly 300 pages, bound in cloth, and is sent postpaid for $1.50 per copy. Every farmer should have this book, because problems confront him daily, which are answered in a concise way in this book. Every subject which interests the reader is easily found through the comprehensive index.

Pacific Rural Press

420 Market Street — **San Francisco**

PUBLISHERS.

REDWOOD TANKS—DRYING TRAYS



I deal direct with the consumer. If I had agents to sell my product it would mean that I must add to my price as much as the agent's commission would be. My lumber is brought direct from the forest. Latest improved machinery. Up-to-date methods. Redwood Tanks, Drying Trays, Picking Boxes, Peach Boxes, Egg Cases. A tank 5 ft. diameter, 2½ ft. deep, $7.50. A tank 6 ft. diameter, 2½ ft. deep, $10.50. Large stock of tanks of various sizes in stock. Anything made to order on short notice. Spraying tanks. Grape stakes.

R. F. WILSON, 447 W. Main St., Stockton, Cal.

WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectation. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts. — **San Francisco**

THE PACIFIC RURAL PRESS

Vol. LXXXVIII. No. 6. SAN FRANCISCO, SATURDAY, AUGUST 8, 1914. Forty-Fourth Year.

State Library 7-1-16

How California Fruit is Auctioned.

[Written for the Pacific Rural Press.]

How fruit is sold at auction may be of interest especially to those growers who have little opportunity to visit the eastern markets.

The shipping company in California has a man to fill out a "manifest" sheet as fruit is trucked from the shipping shed into the car. This record tells the name of the grower, the number of boxes and crates of each variety of fruit and its size as indicated by the pack marks. Thus, "5x5" on the outside of a crate means that in each of the four baskets in the crate, plums, or apricots or other fruit is packed 5 square, usually in three or four layers which may be seen by the height of the cleating under the lid of the crate. The number, as "96" on a box, which is smaller and of different shape than a crate and with less ventilation, indicates that there are 96 fruits in the box. Mislabeling as to size has often gotten growers and shippers into disastrous clutches of the law, especially in New York and Canada.

Each different variety and size of each grower is grouped under a "lot" number on the manifest. When the car is tight loaded and properly braced, the manifest is sent by mail to the auction company to whom the car is billed. The auction company prints a catalog on sheets about 6x15 giving the same information. For the Central Fruit Auction Co. of Chicago, the copy for the catalog of the morning's sale is handed to the printer at 3 p. m. of the day before, and the catalog is ready for use by 6 p. m. before the fruit reaches the auction establishment to be unloaded for display to buyers.

Fruit Auctioneer and Representatives of the Auction Company and of the Fruit Shipping Companies Ready for Business.

Buyers of California Fruit in the Auction Room of H. Harris & Co., Boston. The Highest Bidder Gets the Fruit.

Each car has a separate catalog and on some of the markets these catalogs are bound together. In New York on June 22, for instance, the Connolly Auction Co. had a volume of 72 pages covering California deciduous fruit in 23 cars, another of 42 pages covering California citrus fruit in 34 cars, besides other volumes for fruit from other places. The Fruit Auction Co. of the same place had California deciduous fruits in 9 cars, citrus in 11 cars, foreign citrus and pineapples in considerable quantities, and a little Florida fruit. Brown and Seccomb had California deciduous in 4 cars, northwestern in one car, California citrus in 9 cars and some foreign citrus and pineapples.

All three auction companies use the same display rooms and auction rooms at different hours.

The foreign fruit is landed after the sales, only a sample box of each lot is taken to the display room before the sale. Western fruit in New York is all displayed on Pier 20, being unloaded before 6 a. m. from the barges, which carry 8 or 10 cars across the Hudson.

On all the markets, when a car is switched to the display sheds to be unloaded, representatives of the railroad and of the shipping companies, called there "the receivers" look to the icing and the braces, making note on the bill of all improper conditions. If the ice chest is over half full, no objection is usually made. If the braces are in place, and the tiers of boxes not "buckled," the packages are likely to be in good shape. But often as the car observed about midnight in Chicago June 16, the fruit is jammed together, the crates and boxes are buckled up and more or less broken, showing hard bumps in switching. Sometimes the braces have been knocked out, though in loading they were driven into place with sledge hammers, and usually in unloading must be knocked out with the same tools. In one car that night in Chicago a crate had been broken open and one basket stolen; how, was unexplainable.

Since California growers have become so strongly organized, there is no trouble in getting satisfactory adjustment from the railroads for broken packages. They are all set aside in separate lots beside the sound packages of the same lot and the railroads pay the difference between the price of the broken lots and of the whole lots of which they were originally a part. The broken lots usually sell for less than half price though all the fruit may be there and sound.

After inspection of the car, two men called "stackers" collect the various lots together as called for in the catalog and truckmen wheel them out onto the big display floor. Often, the various crates or boxes of a lot are scattered about the car and much time is lost collecting them, because the marks on each package must be consulted. Those who load the cars in the West could materially help by keeping the packages in each lot together, but since that is inconvenient, it is not likely to be done.

Many times, too, mistakes have been made in listing fruit on the manifest so that many corrections have to be made on the catalog as the fruit is taken from the car.

Crates are stacked as nearly as possible, ten deep on the floor; cherry boxes 15 deep, cherry crates from the northwest containing 24 full pint boxes are stacked 8 deep.

About 3 a. m. the "head checker" for the auction company compares the fruit stacked on the floor with the corrected catalogs, count-

(*Continued on Page 125.*)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

ONE DOLLAR PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS CO., - PUBLISHERS

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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FRANK HONEYWELL - - - - Manager
W. H. SCHRADER - - - Adv. Manager
D. L. SCHRADER - - Subscription Manager
R. E. HODGES, J. C. LOOMIS - - - Assistant Editors

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Aug. 4, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date	Normal to Date.	Maximum.	Minimum.
Eureka	.00	T	.11	60	50
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	98	56
S. Francisco	.00	.02	.01	84	50
San Jose	.00	00	.00	94	48
Fresno	.00	T	.00	104	60
Independ'ce	.00	.06	.00	98	54
San L. Obispo	.00	.00	.02	82	50
Los Angeles	.00	.01	.00	86	58
San Diego	.00	.00	.00	74	60

T. means trace.

The Week.

The world is upside down. For no sufficient reason, in fact in opposition to all reasons for peace, drawn from the intellectual, social, and industrial progress of mankind. Europe has been plunged into a general war which the London Times says is the greatest since the fall of the Roman Empire. We imagine the designation of this prototype of the present continental conflict is made upon a geographical basis, for surely no spear-thrusting, mace-mauling of those thousands of people centuries ago has other resemblance to the whirling, flying, exploding rush of millions upon each other, which is now proceeding upon the same territory. Besides, the geographical resemblance is not true, because at the earlier date the rest of the world was ignorantly tranquil and disinterested, while now every ocean is a possible scene of deadly conflict and every continent has areas open to invasion and bloodshed. It is in fact a world war, and the like of it the world has never seen nor could see. As a result, alarm, suffering and wanton destruction of life and property are world-wide. There is nothing old in the present situation, except that the heart of man, in spite of our advancing Christianity and humanitarianism is unchanged; it is still fired by ambition, greed of power and conquest and pride, and it recks not that countless millions mourn through its pursuit of unholy purposes. In the old wars there was sometimes a pretext of serving civilization against barbarianism, or at least a frank avowal of the rights of might, and therefore these old wars had something more honest and perhaps more of moral quality in them. The war which is now beginning has no barbarianism in it unless it be on the side of those who declared it, and the result will show that there is no might except that which is right. As this is really the first war of its kind and extent which the world has ever seen, so will it also be the last, and the world will abhor the memory of those who, in the absence of any claim of right or justice which the world will recognize as adequate, have brought it about.

The Duty of America.

It is the plain duty of Americans to view this war as a world calamity, and conduct themselves accordingly. Fortunately this nation has a force of resources and of moral influence which can be well used to moderate the sufferings of Europe, to limit the time of conflict and to reconcile the combatants. In the nature of things, a war which breaks out so fiercely and will probably consume gold, food and human life so rapidly, cannot last long. Let America stand firm on her power and her principles, let her be ready to enforce her rights to trade and transportation and to move as she deems right in the world's ways, which some of these combatants may try to cover as their own, and at the same time let the light of true humanitarianism illumine all her attitudes and actions, and her influence, in setting bounds upon this conflict and in shaping its consequences, will be profound. To achieve this, this nation must keep cool; her attitude must be critical, discriminating, judicial. Fortunately she has no dependence whatever upon Europe which will make this attitude difficult; it is simply a matter of forsaking, for the time at least, agitations which breed disquiet among our own people and diminish industrial force and fortitude; for, to manifest the strength and solidarity necessary for world service at such a time, the American people must be busy and confident. It may afford us an opportunity to take a good look at ourselves and gather strength for future action, based upon such clearer vision as may thus be attained. Thus may we be better grounded in the patriotism of peace, which is a higher emotion of the public mind than the patriotism of war. If we can work along on this line the psychological disturbance will quickly disappear from our financial and commercial affairs. Confidence will be restored in legitimate enterprises; stocking-hiding and back-yard burying of gold will not prevail, prosperity will be enhanced because our surplus products will meet increased demand caused by war's waste and idleness elsewhere, and this nation may stand more clearly than ever before in the world's eye as a demonstration of the rewards of peace as a national policy—rewards which follow the casting down the burden of a national armament, renouncing the greed of conquest, and existing for the good of mankind.

We are aware that possibly some reader, burning with emotion, may consider the foregoing too chilly a suggestion for the times. If, then, he must have a thrill, let him find a wholesome one in these words of the Call: "No war can last forever. There is always a struggle, a clash of men, when 'furious Frank and fiery Hun shout in their sulphurous canopy'; and then all is quiet, the shattered battalions return to their bivouacs and the diplomats meet and readjust boundary lines and fix indemnities for the impoverished peoples to bear. In the United States the treaty makers will probably meet, and the 'Peace of Washington' will end all strife. In Europe no country, with the possible exception of Switzerland, can be considered sincerely neutral, and Switzerland may yet be involved. A treaty must be negotiated in a neutral land, and the United States promises to be the only territory free from the animosities which are historical and are being aggravated in Europe. So prepare the parchment for the 'Treaty of Washington.'"

The California Situation.

So far as can now be foreseen, California is in good form to carry her part of the American burden of peace demonstration. Naturally one thinks first of the exposition. The authorities thereof are not alarmed. They state that foreign participation has been so far entered upon that lapses are not likely to occur. They believe that a war last year or next year might serve the exposition worse. Now they anticipate a short war and a new signification to their title, for it may be doubly Pacific—honors to the ocean and a joy-celebration of a new world's peace. There is naturally at the moment alarm lest ocean-shipping may be rendered unsafe, but that is not expected to long endure. Much shipping owned abroad will fly our flag under an American register which Congress provided for last week, and it is expected that Great Britain will go at once into marine insurance by guaranteeing the safety of all shipments of foodstuffs carried in British bottoms. This would at once solve the problem of the shipment of American products to ports of British call. Surely Europe will need food and cargoes will keep going during the war, while at the close of it there will be a grand rush of everything eatable. And California has gold enough for all uses. F. L. Lipman, vice-president of the Wells-Fargo Nevada National Bank of San Francisco, after asserting the general soundness of the financial situation in the United States, said this: "Almost the first effect of the war will be to shut off the streams of capital from European sources, and this may cause temporary uneasiness among holders of securities in corporations largely financed from such sources. But except for this and a possible hardening in prices of foodstuffs in most demand abroad, there will be no immediate ill effects in California from actual hostilities in Europe. The gold exports from Eastern ports has not in the least affected the supply in this market, while the banks are in condition to withstand the strain of every legitimate business demand."

There is evidently a plain path for Californians. After dismissing from our borders those residents who still own allegiance to foreign powers and who are going forth this week in a whirlwind of ill-placed publicity, Californians should settle down to honest work at development and production, strip off the frills of freak self-legislation which some of our misguided citizens have initiated, get the best men possible into the offices and forget the discords which this summer's frenzied politics are engendering.

Welshing on Fruit Contracts.

We are exceedingly sorry to hear that some fruit buyers are breaking the contracts which they made for fruit earlier in the season, and we trust they may get out of that state of mind as soon as possible. There is, of course, a strong temptation to run sidewise when one finds straightforward outlets closed, but it

ought to be resisted. From what we have already said about registering ships and guaranteeing cargoes, it is altogether probable that the closed fronts will soon open for a line of trade without which there can be neither peace nor war nor life in any form. The grain blockade at Port Costa is seriously inconvenient. The steamers should be loaded and conveyed as a fleet, if need be, by United States warships, through the canal to their destination. Let the old Oregon repeat her prowess in the cause of peace.

This matter of refusing to receive cured fruits for which contracts have been made is peculiarly unwise and uncalled for because all the chances are that the ownership of good cured fruit will be worth far more than calculated before the opening of another crop year. This year's prune crop is small and of high grade. The handling of the crop in France and in Servia, two great sources of the world's supply, will be undertaken with a maximum of difficulty and a minimum of product and the world will be hungrier for cured fruits next winter than it has ever been before, probably. We do not wish to believe that those who are now refusing to receive on their contracts are calculating to force later sales to them at a sacrifice. It might be good speculation, but it is poor morality. Of course, the producers will go to the courts with their contracts, but they should not be forced to the worry and cost of that recourse. They are appealing to Congress to expedite the registry of foreign-built ships and thus remove the embargo which is both physical and psychological—and possibly speculative.

Current experience links itself into the chain of events which are demonstrating that the California producer of high-class and special products cannot afford to allow his business to continue so poorly financed as it is at present. What a mistake to rest prosperity upon the basis of fair-weather contracts, and to depend for financing upon those who, as buyers, have a normal interest in depression and can hardly be expected to be actuated otherwise. It is the producers' own fault that they find themselves at the buyers' mercy. With proper organization and their own financing they would be at this moment indifferent as to whether buyers insisted on their contracts or not, while now they are alarmed at their fracture. In view of the prospective demand, every pound of good cured fruit should be worth more than it was ten days ago, and if organized to help and protect each other, a considerable increment of value would be realized. Every pound of good California food products should be secured this year, for the world will need every pound which can be spared from the nourishing of our own multiplied exposition population.

Money and War.

It is a very interesting incident that an Atlantic steamer sailing from New York with eleven million dollars in gold before war was declared got news of the war by wireless and turned and scudded back to an American port with covered lights, although she was four days out when she caught the scent of war. She was a German passenger ship and had no taste for meeting an English dreadnaught with all that gold in her pocket. But we hardly needed that eleven millions, for it is officially reported that there is in the United States treasury $1,500,000,000 in gold and silver, $150,000,000 in gold reserve and $130,000,000 free gold in the general fund. Truly, these immense sums with the $500,000,000 emergency currency available will enable this country to face any financial crisis with considerable equanimity. But financiers tell us that the "tightness" of the last few months is about over and the war should lift us wholly out of it by making everyone more busy and less finicky.

And there is another cargo which has hapily come to port. A water-front reporter tells of the whimsical way the captain of the French barque "Buffon" told of near-foundering in a storm at sea on the "Buffon's" arrival in San Francisco from Hamburg. "They call my ship the 'Clown,' and sent me to bring a thousand tons of German sausage and beer and sauerkraut. Can you believe that we did not run into a storm? Of course we did. A French ship should not carry German sauerkraut. The winds were against us and the goddess of the sea was angry until she remembered the name of the captain. Ah, that made up for everything. What is my name? Le Beau," said the captain.

Queries and Replies.

Querists must submit full names and addresses.

Cherry Leaves on Old Wood.

To the Editor: I have a cherry orchard two years old, and noticed the other day the bunches of leaves on the wood of the previous year suddenly die. I see no insects. This year's growth is fine. Please tell me what it is, and what can be done? When I pull on dead leaves the whole bunch of leaves comes off.—L. A. P., Sacramento.

Such leaf-bunches sometimes die from sunburning of adjacent bark. Occasionally they are killed by the boring-in of a polycaon beetle at the upper side of the spur. Sometimes they seem to be famished by the sap-draft of the new wood above. We know of nothing to do if the trees are well whitewashed against sunburn. If the new growth keeps going all right it indicates health in the root.

Sugar Beets or Cactus.

To the Editor: Can I plant sugar beets for stock food in August and make a success of them if I irrigate before planting, and when could I expect to commence to feed them? I am under the Turlock district. After reading Mr. J. A. Powell's letter on cactus, I am not very anxious to plant it for cow feed if it has no more food value than our common pie melon or stock melon, for the pie melons here do not make milk.—C. P. G., Turlock.

There is a little more risk in getting a good stand of beets in August than earlier or later because of the danger of high, dry heat. The beet is more tender at germination than at other times. But if you wet down well and plant a little deeper (if your soil is light and friable) than you would in winter you ought to do well, if you get good strong seed. Afterward, irrigate as may be required to keep the beet growing. Do not wait for rain until the growth stops and then start it again with water. If all goes well you ought to have well grown beets for feeding in January.

Pie melons, cactus, corn-silage, or other carbonaceous succulent feeds are good for milk if balanced with protein foods, like alfalfa, oil meals, bran, etc. They are, of course, scant of milk producing materials if fed by themselves alone.

Summer-Growing Legume.

To the Editor: I am anxious to find a summer cover crop. Kindly inform me if there is a leguminous crop which can be grown in summer with irrigation ordinarily given olive trees. Could hairy vetch be used for the purpose?—P. T., Folsom.

The cow pea is usually the most available summer-growing legume; the vetches do better in the rainy season. But with the irrigation "ordinarily given to olive trees" you would not get much growth of cow peas and you would spoil the olive crop—coming into the autumn with weary-looking trees and shriveled fruit, which may plump-up with the rains, but never get to be first class. Do not go in for summer cover crops unless you are sure you have an excess of soil moisture. Irrigate and cultivate well and give the trees all the advantage you can.

Bees In a Vineyard.

To the Editor: We let an apiarian put 60 hives of his bees under some trees in the middle of our 90-acre vineyard. We have just been informed by our Italian workingmen that the bees will pierce the skin of the grapes for the sugar and those grapes so injured will dry up and cause us a loss of at least 20 tons before time for harvesting the crop. Is this true? I have no desire to cause the owner of the bees extra trouble in having him remove his bees unless it is so.—Reader, Modesto.

All careful experiments known to us have demonstrated that honey bees will not, and perhaps cannot, puncture the whole skin of a grape, but if the skin is broken, even with a pin-puncture they will help themselves to the contents, if other food is not available. If we are right in concluding that such a demonstration has been made, the inference would be that if other insects, birds, etc., are present and puncture the skin, the bees will do the rest. We would feel better not to have such a lot of bees marooned in the center of a large vineyard at this time of the year.

Stunted or Thrifty Trees.

To the Editor: If a young pear tree has taken three years to make a one-year growth because it has not had the proper care, is it equal to a tree that has had proper care and has made an equal growth in a single year? Providing both trees are taken care of properly in future, will the old tree become as good a tree in bearing time? Would the answer to the above question also apply to a prune? Would you advise taking out the three-year-old trees and replanting new trees?—E. C., Los Gatos.

Speaking generally, it is better to have a free-growing yearling than a stunted three-year-old, and the outlook for the former is better. But one has to apply that principle discriminatingly. For example, some thrifty yearlings may throw out six-feet shoots the first year in the orchard; others may make six feet by three two-feet growths. As between these two we might prefer the latter—if the growth was plump and smooth, not thin and wrinkly. But if the trees have only made a few inches of growth yearly and that not strong enough to make good leaves or to hold fruit, we would rather have a good yearling, fresh from the nursery. This is true for all kinds of trees. We cannot answer you conclusively. One has to see the trees to properly judge their value and capacity.

The Almond in California.

[From the Address of G. W. Pierce, at the Fruit Growers' Convention.]

(Concluded From Last Issue.)

Provide yourself with some kind of mechanical huller and separator. Life is too short and time too valuable to hull almonds by hand. While there is some loss from mechanical hulling and separating, it is more than offset by the saving in expense and the lessening of the number of employes. Machines of varying capacities and more or less efficiency, are to be had in the open market. While the almond may be left on the tree for a time after the hulls have opened, without serious loss, it is best and most economical to gather them as soon as the hulls open and expose the nut sufficiently to hull easily. If left much after this time some of the hulls will begin to dry and draw closer to the nut, making hulling more difficult. Then too, the nuts will begin to fall to the ground of their own accord. Should a heavy wind occur at this time, many nuts will be blown from the trees. The expense of picking almonds up from the ground is fully three times that of gathering them in the usual manner. Promptness pays in the handling of almonds. Be ready for the harvest and have a crew of gatherers in proportion to your acreage.

Gathering Sheets.—Provide canvas sheets to spread beneath the trees on which to knock the almonds. The size of the sheets needed will depend upon the size of the trees in the orchard. Have two sheets for each tree. The two sheets when spread out should cover 24 to 40 feet square. It is false economy to use a sheet too small for your trees. Almonds will be continually knocked off the sheet onto the ground, thereby increasing the cost of gathering, to say nothing of the many nuts that will not be picked up and thus become a total loss. The methods of using almond sheets vary with the whims and ingenuity of the users. Some spread the sheet beneath the tree, knock the almonds, and either box or sack the product of each tree, direct from the sheet. If but few nuts are obtained, some drag both sheet and nuts to the next tree before sacking to save time. Another and better way is to have a sled 16 feet long, about 40 inches wide and 6 inches high, and with a tight bottom. Have one end of the sheet tacked to one side of the sled. Have boxes ranged inside sled along the side next to sheet and when sheets are emptied the almonds go directly into the boxes. Another and still better way is to have a 16 foot pole sewed into a part of one end of each sheet and have that pole on arms so hinged to the sled that he sheet may be used on either side of the sled. In this way two rows can be gathered at once and thus save time in moving. While boxes are largely used to move almonds from the orchard to the almond shed, they are expensive and deteriorate rapidly. Their hauling, and the gathering up of surplus boxes consume time. Time is money in the almond business as well as elsewhere.

Many growers use grain bags. They are easily carried on the sled, cost but little to distribute and there are no stragglers to gather up. When bags are used, dump almonds into sled and have one man shovel them into a sack, using a simple device for holding the sack, while the others are knocking the next tree. If you are in the grain business as well as the almond growing, use new sacks for your almond work. After the season is over put the sacks away carefully and use them for grain the following year. In that way the sacks for almond use, cost you nothing save the interest on their first cost.

One good heavy horse will pull an almond sled from tree to tree and save much of the wear and tear incident to dragging sheets over the ground. If you employ labor you will find it not averse to having the horse do what men would otherwise be expected to do.

Gathering From the Tree.—To knock the almonds from the tree, tough, springy poles should be used. The poles should be as light as is consistent with the service expected. A tamarack or fir pole 16 to 24 feet long and about an inch and a half in diameter at the butt is an ideal pole for knocking almonds. Take the bark off while green. If too heavy at the butt end shave it down so that it can be easily handled. Tie in bundles to keep straight and store inside the house. With proper care and careful handling, a good pole will last several seasons. Sawed Oregon pine lumber is sometimes used for poles, and if good lumber is obtained, the result is a good pole. Hickory, too, is used with good results. Bamboo has been tried, but while easy to handle, cracks so badly when exposed to the sun that it can hardly be considered a success. Have your crew use poles of different lengths. One or two very long poles is all that is needed at a tree. Almonds on the lower limbs can be gathered more cheaply with short poles. If the trees be old and extremely high, have a man climb into the upper limbs with a short pole.

Do not imagine that because you have a pole you must necessarily beat the tree to loosen the nuts. Put the pole between the branches and vigorously work it back and forth, shaking the limbs and loosening the nuts. Some seasons almonds are harder to knock than others, and require harsher treatment, but remember that tree is your friend. Do not permit it to be abused. The buds you knock off this year may be the ones that next year would be fruitful. Every limb you break off means a wound to heal. Every unnecessary burden placed on the tree draws from vitality that should be expended in the production of nuts.

Hulling.—Almonds should be hulled as soon after gathering as practical. Spread the clean nuts in the sun to dry. Tip the trays slightly toward the south that the nuts may dry quickly. The time allowed for drying depends upon the condition of the nuts at the time of gathering. A good and convenient size of tray is one three feet wide by eight feet long, having two-inch sides. In the early part of the season, while the nuts are quite green they should be raked frequently in the trays to insure drying quickly and evenly, and to prevent mold.

Sulfuring.—No almonds should be sulfured until sufficiently dry and brittle to break without bending. When they are thoroughly dry, the outer shells should be slightly moistened,

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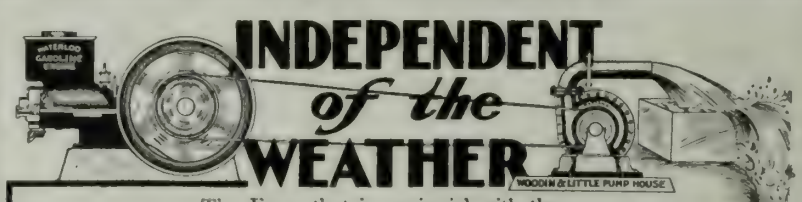

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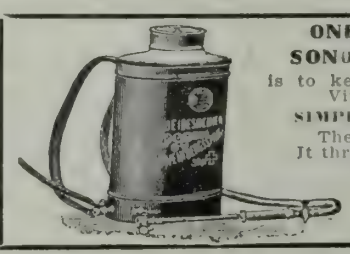

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that they may readily take sulfur and be bleached in the shortest possible time. Great care must be taken in sulfuring lest the kernel be effected. Should this take place the nut will soon become rancid and ruined. Less bleaching is being done now than formerly. Stack the trays of almonds on a car and run them into a sulfur house. Twenty to 30 minutes is sufficient for paper shelled varieties. Soft shelled would take a little longer. Hard shells are rarely bleached, and never are when used for nursery purposes. After bleaching, the car containing the almonds should be allowed to stand 24 hours in the open to permit the almonds to become dry. Do not expose them to the direct rays of the sun after bleaching, as it will darken them. When thoroughly dry, sack and they are ready for market.

MARKETING.—We have now reached a very critical stage of the almond business. It is the goal we have long had in our mind's eye. After all the months of anxiety, is our year's work to be a success? Having the crop, it all depends on the marketing. Almost anyone at all adapted to the business can attain average success as a grower. To dispose of the crop to the best advantage, and at the same time to do something to build up the industry and place it on a firmer commercial basis, is a task worthy of the best business ability. The latter requires a different sort of ability, a special training and time to devote to the work which the average grower has not at his command. A grower, in the disposal of his product, comes in competition with, or deals with expert salesmen. The grower is at a disadvantage. He has not the data upon which to base conclusions and establish values. He is not familiar with the tricks of the trade. He may occasionally make a creditably fair sale, but in the long run the experience of the specially trained man will beat him. Individual producers are easy prey. Organized producers hold the whip hand. The trade is organized. The grower must meet organization with organization. It is one thing to produce an almond. It is quite another thing to sell it.

Previous to 1910 the almond growers of California were without effective organization. In that year the California Almond Growers' Exchange was organized. Since that time the output of the State has greatly increased foreign importations have increased at the same time, but prices have been much better, markets have been steadier and speculation in our products has been largely eliminated. Improved conditions generally prevail. Co-operative buying of supplies has proved an economy. New markets have been exploited. Further exploitation will be necessary when the recently planted orchards come into bearing. Lend a hand in the business end of the occupation. You are needed. The benefits will be mutual. Join a local association. Present your troubles, for you will have them, to the organized growers. Get the benefit of their combined intelligence and experience. Get the benefit of the expert salesman employed by them. In other words help develop and protect the almond industry. Remember there are two equally important branches of the almond business. The first is the production of the almond. The second is its marketing.

The sawdust method of cleaning grapefruit is ineffective as well as highly injurious.

HOW CALIFORNIA FRUIT IS AUCTIONED.

(Continued From Page 121.)

ing the packages. The "receiver" who is a representative of the California Fruit Distributors or other shipper, also counts the packages, noting the marks on them to see that they are stacked correctly. Then if his inspection differs from that of the auction checker, both men count the lot in which the discrepancy occurs. Then the fruit is sold according to their final corrections.

The auction sale in most cities commences at 8 or 9 a.m., especially on deciduous fruits. For an hour or two before the sale, intending buyers are inspecting the fruit, the top box of each lot having been opened for this purpose by the auction company's men. Before beginning the inspection, each buyer goes to the office and gets a copy of every catalog in which he is interested. He probably has definite orders from retailers outside the city, or perhaps he is buying for a string of fruit stands within the city, or perhaps he is going to peddle his purchases about town. In the former case he will look for rather unripe fruit which he can re-ship before it falls down; in the latter case he looks for the broken packages and the ripest fruit because that goes cheapest on account of the necessity for immediate consumption or loss. Such buyers are of least importance; the ones to cater to are the big buyers who demand honest pack and sound fruit. These look over the catalogs and select the lots from growers they know are reliable for honesty of pack. Fruit from the others does not even have a chance, because he will not waste time loking at it.

Then for an hour or so he will personally inspect the opened samples of the lots or "lines" he has selected, for the condition of fruit on arrival always varies from day to day, even from the same grower.

Some auctions have rules prohibiting buyers from handling the fruit, but none enforce these rules. The buyer steps lively from one lot to another, alertly scanning the fruits, picking out two or three here and there to see the condition of that beneath. After a quick inspection of the lot, he makes a hieroglyphic indicating its desirability for his purpose, and passes to the next.

At the opening of the sale, a gong sounds; and the buyers troop into their seats in the auction room. The auctioneer calls off the corrections on the catalog and immediately starts the sale. Each lot is sold separately. Often the auctioneer asks for a certain bid; and if someone wants it at that price, he shouts the number, or waves his arms, or winks at the auctioneer, or sticks up a finger. Often the buyer does not want his competitors to know he is bidding.) Then the auctioneer calls for a 5-cent raise until he gets it until the price is built up to the limit. Sometimes a number of men are wildly trying to get it at the same price, but won't bid higher. The auctioneer must decide quickly when the price can't be raised and name the man who gets the lot. The others are disappointed, but the next such lot may fall to any one of them. It is necessary for the auctioneer to show no favoritism, because support of many buyers is necessary to the existence of the auction. The salesroom of the Central Fruit Auction Co. of Chicago seats about 70, and buyers were standing all around the room on the days of the writer's visit.

No delay may be permitted; the sale of each lot must be closed the instant the high price is reached—how the auctioneers get breath for their continuous performance suggests the need of pipe organ machinery. But on that June morning in Chicago, the beginning of the season, about 1000 lots were sold separately. The buyers, of course, are in a hurry to get the day's business, so there is no rest for the auctioneer.

When desirable lots are up for bids, the pandemonium is indescribable; when a poor pack or a lot with a reputation for dishonesty is put on sale, the freezing silence or scattered indifferent bids should be felt by that grower; for it would be an education, more effective than all that the PACIFIC RURAL PRESS can say.

The high price having been reached, the autioneer names the buyer, and record is taken by the auction clerk and by the representatives of the shippers. These representatives average the prices. A telegraphic report is sent to California within a few minutes after the close of the sale, so that each grower knows very quickly the general condition of his fruit and the price it brought.

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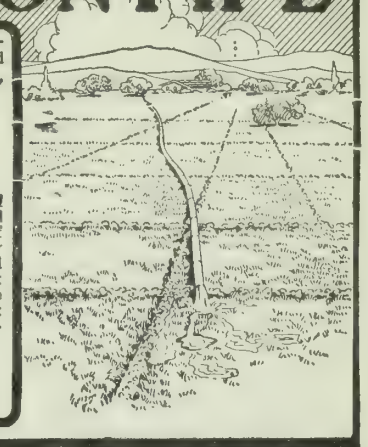

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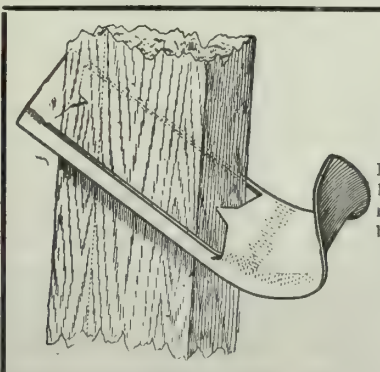

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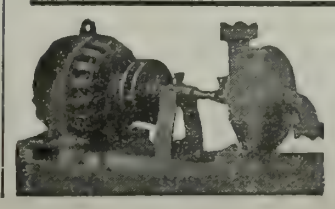

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Mention Rural Press.

Citrus Drops.

[From Bulletin of Citrus Protective League.]

Clippers with rounded or blunted points should be supplied. These should be frequently inspected by the foreman to prevent their becoming dull or loose at the joint.

Picking sacks of heavy material, which have partially closed mouths, allowing the fruit to be emptied from the bottom, and having a capacity of not more than half of a large standard field box, should be used.

Pickers should not pull the fruit from the tree. All oranges should be severed by means of the "double cut."

Fruit should be placed carefully in the picking sack and not dropped or tossed in.

The picking sack should be lowered into the field box and the oranges allowed to roll out gently without appreciable drop.

No fruit should be picked up from the ground and placed in the field boxes.

Smaller boxes of lighter materials are recommended.

The fruit should not project above the top of the field box, and the latter should be transported to the packing house on a spring wagon. The driver should be given an especially prepared seat and not be allowed to sit on the fruit.

Each picker and packer should be required to wear gloves.

Picking receptacles, field boxes, and packing bins should be kept free of gravel, twigs, splinters, protruding nails or other foreign matter.

The desirable hopper is small, has padded sides, and allows the fruit to be emptied gradually by means of moving belts. The fruit should not fall by gravity at any stages of its journey.

Uniform and definite grading rules should be established for the State.

Wherever washing is not absolutely necessary in order to render the fruit marketable it should be omitted.

Water in the soaking tank should be frequently changed, and sprays of fresh water should be directed against the fruit as it passes through the washing machine.

The best type of washing machine has the fruit in plain sight at all times, allows no pressure on the oranges save that afforded by their own weight, does not allow the fruit to tumble over or against each other, and does not allow twigs, thorns, nails, etc., to become lodged in the runway through which the fruit must pass.

Fruit should never be packed while moist. An artificial drier in which a warm air blast is circulated around the fruit seems to be a necessity from the standpoint of thorough work and careful handling.

Loose packs of fruit are more liable to be injured in transit than those of medium height with every orange firmly in place.

Decayed fruit should not be left in the boxes or allowed to accumulate on the floor or under the packing bins in the packing houses.

Curing is unwise, as the decay increases the chance for the infection of bruises or injured spots and facilitates the development of decay before shipment and transit.

In all establishments that handle a standardized product efficiently, a system of inspecting the product as it passes from one stage in the work to another is installed in order to place the responsibility for and prevent slipshod work by an individual.

CITRUS HERE AND ABROAD.

[From Citrus Protective League Bulletin.]

The stability and prosperity of the citrus industry in the United States, and especially in California, is due to the fact that the citrus fruit growers are better organized than other agricultural industries. Other countries are studying and adopting the plans worked out in the United States in order to effect economies in the production of their crop, in preparing it for market, and in developing an orderly distributing system.

These organizations, developed and controlled by the producers, have stabilized the 200 million dollars invested in the California industry; and in this respect distinguish it from the condition of the industry in all other parts of the world. The Spanish producers, however, are making progress in organizing the distribution of their crop; and in 1913 distributed 20 per cent of the total crop through their own agents located in the principal markets of Europe. The Italian growers are making slow progress in this direction, the growers in the West Indies, in Cuba, and Porto Rico are attempting to systematize distribution. In the future it may be expected that world's commerce to citrus fruits will be gradually changed from a speculative to an orderly merchandizing basis. The former condition underlies the handling of the foreign industry and of its by-products.

A SQUIRREL PROBLEM.

To the Editor: Last year I was visited by a man on the government payroll known to farmers as "the squirrel inspector." He informed me that it was his duty to see that squirrels were eradicated in our district, and since there had been a complaint about the slack methods of former inspectors, he would cover the ground thoroughly. He said, putting it in his own words, that unless I did the work in the near future it would be done by his men and, besides paying for their work, the sheriff would get a dig out of it and the judge would get a dig out of it, and the supervisors would get their dig, too. Then, to leave a more friendly impression, he said that ten squirrels would eat and destroy as much feed as a cow, and wouldn't I have a fit if some one should turn fifty cows into my field.

Well, to cut it all short, I cleared my place of them, and so did several of my neighbors. On the other hand, some of my neighbors bluffed the inspector and as a result my ranch is again well stocked with squirrels. What I would like to know is this: Can the inspector, who is coming again soon, compel me to kill my neighbors' squirrels, or can I get pasturage from government at the rate of $2 a month for every ten head of squirrels as long as they are pastured on my place? A. E. SLATER.

Pacheco.

[If your county officers are such good diggers it ought not to be hard to get the ground squirrels out of the county. Probably you will have to be one of the usual penalties for to clean your land again. That seems being good.—EDITOR.]

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FRUE & ROBBINS, Russ Bldg., San Francisco.

Tokay Grape Packing.

[Written for the PACIFIC RURAL PRESS.]

Lodi Tokay grapes on July 30 were just beginning to color, but even those berries that were fully colored, lacked proper sugar, and many will probably be sent to fool the Eastern consumers and the Western producers this season, according to H. F. Ellis of the California Fruit Exchange at Lodi. Chas. Willis, a very successful grower of the same section, estimates that shipments will begin August 15, ten days earlier than last year, but the fruit will be so sour that it will hurt later legitimate shipments because its early full color will lead many to buy and get disappointed.

Grapes are said not to improve either in sugar or color after being picked. But immature fruit is more likely to decay because it hasn't enough sugar. Likewise mildewed grapes won't sell, nor will those which are picked shortly after the rains which often come before the crop is all picked. Mr. Willis thinks that either the berries absorb an excess of moisture through their skins, or they get it from the roots. Anyway they seem to get more transparent for a day or two and if picked then, cannot stand the journey of a 2,000 to 3,000 mile trip nor the attacks of mold. This trouble was not noticed last year because both soil and air were unusually dry.

SULPHURING MILDEW.—Mildew has been specially troublesome this year even enough to produce a distinct smell over the vineyards; and only by six applications of sulphur has Mr. Willis kept it under control. He has one vineyard of four or five acres for which he has been offered $100 per acre for this year's crop. But if weather had been hot so as to cause the sulphur to fume properly, both the leaves and fruit would have been burned by the excess of sulphur. A neighbor of his used to think he ought to apply it directly on the bunches, but has decided that to be too dangerous and no more effective than scattering it over the vines. He puts it especially on the lower leaves, and the northeast side, where mildew is usually found, if at all, and on the vines with the heaviest foliage, and those on dampest ground.

PICKING AND PACKING TOKAYS.—Testing for sugar is not yet generally practiced in this section, but Mr. Willis ships only mature stuff because his name and brand are called for by certain consumers and jobbers on the Eastern market and he cannot afford to lose his reputation.

Picking by color is unreliable because color varies with the seasons and local climate. Yet a certain color is demanded by the trade, and the grapes are picked at that stage. From green they pass through a purplish yellow transparent stage with reddish flecks, to a solid color; and at this first solid color they should be picked. They do not sell so well when darker colored. As they become older and riper they can scarcely be told from black grapes.

The bunches ought to be laid into the boxes, not thrown in. The best way is to grasp the stem, not the bunch, in one hand, cutting it with the other. Every touch on the berries takes off the bloom which makes grapes and other fruits appetizing. Observation of the government experiments at Lodi in cold storing grapes with bloom rubbed off or left on, has not convinced Mr. Willis that absence of the bloom makes any difference in keeping qualities.

People come to this ranch every season to get pointers on packing, but all he can do is to give suggestions and let them learn by experience.

One point is emphasized. Never handle a bunch more than twice—once in picking, and once in packing. Beginners pick over the grapes in the lug boxes to find just the bunches they want. This rubs off much bloom, pulls off berries, bruises them, and breaks bunches, subjecting them to mold and rot before they reach market. An experienced packer selects a bunch from the top layer on the box, snips off with scissors, all bad berries, those that may be mildewed or dried, or green, and the small ones (the shot grapes of which there are many this year due to lack of pollination). That bunch is then laid into the basket where it will stay, with no further handling. An experienced packer can fit almost any bunch compactly into the basket (5-pound baskets of which four are put in each crate). But beginners are quite sure to leave lots of space, making necessary a very high loose pack to get the required weight. After being cautioned against this, he or she packs them too tightly, pressing them too hard, breaking stems and spoiling the shape. It is better to pack too loose and let the squeezing be done by the footpress when nailing covers on the crates. The flattening of the grapes next to the cover seems to be no injury unless they are broken. No bunches are cut in two if possible to avoid it. This seems to allow the berries to dry out and shrivel and toughen; a condition to be avoided.

No cluster pack goes from this ranch because Mr. Willis feels that buyers would think after seeing the finest bunches of the cluster pack, that the grower is using the culls for the ordinary pack which constitutes the largest part of the crop.

One fall, Mr. Willis delayed the picking, hoping to get better prices for later shipments. But damp weather came before the crop was off, and stayed so that he lost about $500 worth of grapes.

A warning is given not to expect too much of grapes from young vines. An equal quantity from 10-year vines, growing beside 20-year vines such as Mr. Willis has on the home place, and handled in the same way by the same persons, will not keep nearly so well as those from the older vines. This he lays to the superior vigor of the mature vines for fruit-solid production, putting less energy into wood growth.

Mr. Ellis also calls attention to the fact that young vines set fruit too compactly on the bunch. It renders packing difficult, makes mildew harder to sulphur and more aggressive because the close set berries hold moisture and exclude air and sunshine. The older the vines, the looser are the bunches, and the easier to clip out the defective berries.

"I believe there is as much or more money in Tokays than in any other fruit. We always get more than half a crop, and when the crop is short, the price is high. I would be foolish to sell my vines at $1000 per acre," is Mr. Willis' sentiment based on years of experience with a small vineyard.

The J. K. Armsby company urges local shippers to book all they can to Galveston and New Orleans via Panama Canal this month in order to convince the transportation companies that it is worth while to stop at those ports. The rates are about half the railrates if 4000 tons are booked in August.

A canal for heavy transportation through San Joaquin valley is recently suggested.

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SUB-IRRIGATION IN THE GARDEN.

To the Editor: I read in your paper of July 11 an answer to a question as to the merits of underground tile irrigation. You stated in your answer that it had been tried repeatedly some years ago in California, but in every instance had proved a failure. In an Eastern journal there is an article and illustration of the tile system as used in Florida. They state in the article that this system has been in use since 1898 and is successful. I have been interested in this subject for some time and would much appreciate your views as to why this system would be successful in Florida and not be satisfactory in California.

Ventura. READER.

[Our comments were based upon the growth of trees or vines or other permanently placed plants. The Florida experiment to which you refer deals with vegetables. In our book, California Vegetables, you may see that underground water distribution by tiles is favorably considered, because they can easily be turned out, cleaned of intruding root-masses and replaced. In such sandy soil as they have in Florida this can be cheaply done, and plants on such sandy soil do not need surface cultivation to keep the soil from baking, as is necessary on a heavier soil. Besides the Florida experiment is proceeding under a rainfall of 60 inches and the tiles, which are praised for both irrigation and drainage, are probably chiefly valuable for the latter. It is stated that the tile system can be put in in Florida for $100 per acre; it would cost more in this state and the cost of cleaning and re-laying, which all experience in this state has shown to be indispensable, adds indefinitely to the outlay. The only way we know for one who gets this idea strongly in his head, to be satisfied, is to try it, and be sure to write us about the results.—EDITOR.]

FRUIT FARMER HAS GARDEN

[Written for the PACIFIC RURAL PRESS]

"I wanted running water in my house, so I installed a motor-driven pump at $6 per horse-power per year," said E. J. Steele, a recently retired merchant of Lodi, who now lives on his farm.

"I make my living from table grapes and almonds, but the vegetables we put in just to pay for the electricity are proving a profitable side line. We've just puttered around them when there was nothing else to do, but have sold $57 worth already and will sell as much more. I've installed another motor pump so the electricity has cost me for the year just $57; and I'm able to irrigate the whole place.

"There are three rows of sweet corn just silking out, where I've already raised one corn crop. The first was just tasseling when I planted this, June 10.

"These melons I'm irrigating aren't worth picking, because my son has just come back from town where he couldn't even give away the load he had. Those watermelons lying in the water are all right, the sandy dirt will rub off easily.

"But you notice I'm irrigating in the evening; they would scald or sunburn if the water were applied in the morning.

"My tomato patch over there has blight pretty badly. I wrote the RURAL PRESS and the Editor said to spray with Bordeaux, which I did, but rather late. The vines that were sick already are dead now, as you see, but notice those next to the dead ones are dark green and flourishing."

At the house Mr. Steele showed four 40-foot rows of climbing string beans from which he has sold $40 worth of beans in town. The first crop being off, instead of letting the vines die, he kept watering them and will begin taking another crop from them about August 15. From two short rows of lettuce, $3 worth was sold. One end of the garden is now overrun with Hubbard and crookneck squashes, while cantaloupes, watermelons, and cucumbers grow in dangerous proximity. Other vegetables as corn, carrots, and peppers flourish here and make the garden attractive. After awhile, the orange, peach, and apple trees, among which this garden is planted, will be grown up to furnish fruit to sell, unless the soil is allowed to become impoverished by the vegetables.

LONG-DISTANCE CULTIVATION.

[Written for the PACIFIC RURAL PRESS.]

My ire was recently stirred on a ride through a newly subdivided Sacramento "colony" where all land is sold with the guaranty that water could be applied to all of it.

A young peach orchard purported to have been sold to one of those misguided near-farmers who buy unseen land, was to be cared for by the company that sold it until the trees come into bearing.

It was early in May and this gravelly peach orchard, two years set out, was just being plowed, 8 or 9 inches deep. There was no sign of moisture in the dust-mixed gravel turned up from the bottom of the furrow. Even weeds had failed to thrive.

An irrigating ditch runs through the property near the road, one in which there are several falls farther upstream and which might have been built some feet higher for elevation. A rise of land in this peach orchard contains about fifty trees so far above the ditch that no water could possibly come within a foot of the surface, except by subirrigation.

Inquiry revealed the fact that at some time the previous year every tree had been watered, to fulfill the contract, but that water had been carried to many of the trees in buckets. I imagined that perhaps a bucketful sufficed for several trees, for summer is too hot in that country to carry water.

Earlier plowing this spring might have saved some of the winter's moisture; it would certainly have prevented the outstanding signs of shiftless attention, and perhaps the passerby would not have noticed the uneven stand of starved and thirsty little wild-looking straggling peach trees, owned by an Easterner without guile, who trusted the company to plant and care for his orchard under the contract by which he bought it.

The same trip revealed a little ranch bought by two Hoosier boys with the understanding that water could be applied to every part of the land. They found too late that two acres near their house are above the water. They are planning to get themselves into a peck of trouble by refusing to pay for any water till they get it on all of their land per contract.

"You may set it down as a general rule," said an old resident in another "colony" far removed from the one just mentioned, "that if you live far away from your land, trusting a company or anyone else but a close personal friend to care for it, they will care for their own first, and maybe yours won't get any care at all.

"Still, there are exceptions to this rule as to all others. It is well, however, always to know those with whom you deal at a distance."

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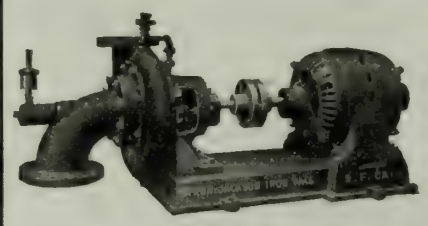

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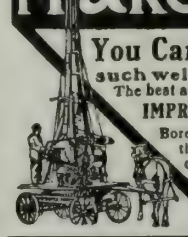

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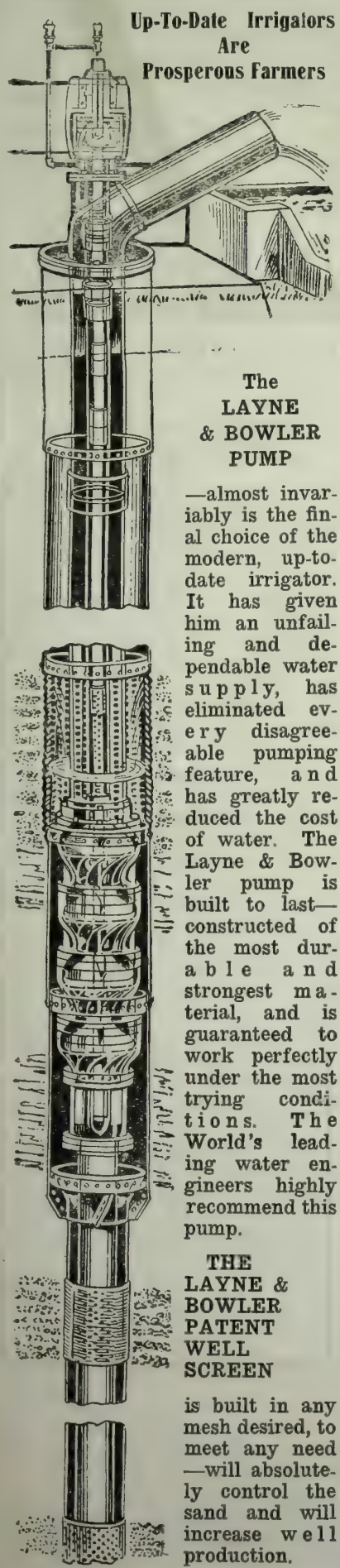

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Constructive Agriculture—No. 31.

SUGGESTIONS OF ALFALFA IRRIGATION.

[Written for the PACIFIC RURAL PRESS by WM. CURTIS CLARK.]

We know that methods of growing crops differ even in small neighborhoods, because of the variations of soil texture. That is why we should be so careful in adopting suggestions, no matter how well they apply away from the home, until we have thoroughly tested them for our own conditions.

This seems to be particularly true with alfalfa growing, especially where the crop is comparatively new to the locality. Nearly every detail among the many should be closely studied, before it is adopted and even then, we are apt to discover that our horse sense has not been horsey enough.

SLOPE.—Take the first detail, grade, slope, or pitch: should we take the suggestion of a surveyor, who is probably not a farmer? Certainly not. Why? He will probably tell us that one inch to the hundred feet ought to irrigate the checks nicely. Possibly so, but it will only be a happy coincidence. Do we labor under the conviction that there must be some slope anyway? Very likely we do; well, let us get some water and find out some thing. We discover that the ground gradually absorbs it, four inches of it perhaps, slowly enough to warrant our making the checks as level both ways as we can get them, always remembering that the flow will be a little slower over the surface when we have a thick stand of alfalfa growing.

Again we may find that the water sinks in very rapidly, then we must give considerable slope to our checks otherwise we will never succeed in getting the water to the lower ends of them.

The slope also effects the height of our borders. Where the land takes in water slowly we must have a good sized border to hold it, and vice versa.

WHAT ABOUT OUR DITCHES?—It is safe to say that we want them as high as we can get them and deep enough to give us a fat head of water at the check gates. Unfortunately we cannot very well correct these things after we have a nice young crop covering the dirt we need to use.

If the soil is a slow absorber, calling for nearly level checks, it is likely that we have pretty good reservoir material and by the same token we need not worry much over the question of cement pipe, for the time being at least, when all is going out and nothing coming in. Our dirt ditches will serve very well.

POWER.—We notice that a good deal of electric power is sold to many unsuspecting consumers for pumping purposes. As a matter of pure convenience it is lovely but if we are going to operate our own little plant we can get along very well with gasoline, distillate or crude oil with more pure economy, although, of course we must be unprejudiced until we have made investigation.

THE WELL.—How are we going to develop our well? We can just get a well driller and have him put one in: when he thinks he has gone deep enough he will stop and depart. We proceed to dig a pit, put in our plant and pump with the result that a heavy sand flow sets in after the first shut down, and we have to get a sand pump and rig it up. We clean out the sand, find that perhaps we are short of water that the next stratum would yield and hunt up the driller or another one.

This time we are on the right track. We have the drill derrick to jerk out our suction pipe with no effort; we have our pump to tell us when enough water is found and the sand pump to be worked by the drill in case another sanding occurs. The driller does not get away this time until we know exactly what we have. Why didn't we do this in the first place, saving time and the extra setting-up charges?

PUMPING.—We know how much water we have so we can now make accurate dimensions for our reservoir. Suppose we figure on a country gentleman's irrigation day as a minimum for safety, then if we have the average "pep" we can put in a couple more hours of course—providing the 8-hour law is defeated and we are allowed to retain some ambition. Suppose then, we say an eight-hour run, allowing for emergencies, then our reservoir should hold a 16 hour run.

RESERVOIR.—In making the reservoir, if we make it deep with banks of good height it will give us the initial pressure to drive the water on its way at the same time save space. Even with banks of six feet we cannot afford to accumulate much over four and a half feet of water in it with safety. We ought to provide for wave action against the banks. This we can do by using some three foot chicken wire on short posts, filling some traw in behind it and throwing a little dirt on it, a sort of mattress effect.

TESTING THE PUMP.—We ought not to be in the dark as to what our pump is doing all the time. We can just as well know what is the best it can do and then have it do so all the season. A wier box in the reservoir will measure the water for us at any time as it comes from the pump without guessing, showing when air leaks begin through the packing or otherwise also of the supply diminishes through the season and how much.

We can get good results by siphoning our discharge over the reservoir bank from the pump into the bottom of the measuring box. This does not weaken the bank, as where the pipe runs through, and permits us to open the pump if necessary without back flow from the reservoir.

AUTOMATIC STOP.—It is very desirable to have the pump stop automatically when water reaches its high level in the reservoir. To do this, attach a flexible small cable to a float—run the cable up and over a small shive held by a tripod of two by fours with legs anchored to stakes in reservoir bottom—continue the cable over bank into pump house where counter weight is attached below a second shive. The weights should nearly balance the float: fix a slide bolt through a couple of staples with a ring wired on it through which the cable passes: tie a knot in the cable so the knot will catch the ring and slide the bolt back when the float reaches high water mark: now put a screweye in the switch handle, snap a piece of sash cord to it and run the cord through a pulley, with a small weight on the end of it; hang this weight on the projecting end of the slide bolt; when the bolt is pulled back by the float cable the small weight drops off and pulls the switch out with a jerk and stops the motor or engine. Sash weights make good counter weights and a five-eighth bolt with one or two bridge washers slipped on it makes a good jerk weight. This arrangement pulls the switch clear out so that there are no burnt contacts or loss of current.

CHECK GATES.—The matter of check gates deserves considerable attention, there are a number of types in use each with some good points. Which ever we use let us be sure that we get good firm anchorage in the ditch banks as well as in the ground. Gates set in the ground 18 inches with three foot panels or wings in the bank are apt to remain in place. In this connection, I have used flat panel gates 12 feet long with two openings in the centre two by three feet each. These are placed so as to irrigate two checks from the double gate. These have given very good results at a considerable saving in cost.

PREPARATION FOR ALFALFA.—I believe there are certain soils, especially in the hot interior valleys, where it is policy not to be in too great a hurry about growing alfalfa. I refer particularly to the old grain lands that have become hard to work, where the soil bakes and cracks, occasionally showing spots of alkali. These areas will produce good barley and sorghums in the same season by cutting the barley green. in connection with sufficient silo capacity, these two crops offer a source of good income during the change to alfalfa, at the same time allowing us to improve the soil. We can also go ahead with the rough leveling and get in enough of the irrigating system to permit of irrigating the corn in furrows, being especially careful to restrict the water to the furrows while the corn is young in order to allow good cultivation.

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AGRICULTURAL REVIEW.

Gravenstein Apple Show.

Mid the music of brass bands, the perfume of the tiers of apples and the flower exhibits, the Gravenstein Apple Show at Sebastopol opened for inspection Monday night. Large exhibits of well packed finely colored Gravensteins formed the background for lesser table exhibits covering almost the whole range of temperate zone fruits all raised in Sonoma county. Many varieties of apples, peaches, pears, plums, prunes, and berries varied the beauty of the scene, while ferns and flowers added their delicate touch. Glasses of jam and jelly showed the interest of the ladies.

The Apple Growers' Union had a large packed exhibit, while the Berry Growers' Association had many berries, fresh and dried.

The display of Burbank's productions as usual attracted much attention, showing many large beautiful fruits yet unnamed.

The Pomona Grange presented a plate and cornucopia fruit display as well as fine specimens of grains and vegetables raised in the county.

The Sonoma County Poultry Federation showed live leghorns and their products, the "Everbest Eggs" which are being marketed under this exclusive brand of the Federation.

The ornamental apple features showed much forethough and work.

Graton had an apple fountain with real water splashing on real apples.

The Panama Canal was reproduced in apples by the Analy High School, a very appropriate piece of work both for its timeliness and for its educational value to the students who made it, and to the show visitors who saw it.

The Rock of Ages made of apples and rising from a sea of apples was crowned by a cross and a clinging figure on which shone the "Eternal Light." It is fitting thus to recall eternal values in a bustling world.

King Gravenstein with an apple harp shared attention with the apple locomotive, the world in apples, a prairie schooner, a colonial fireplace, and other attractive designs throughout the center of the tent.

Visitors were invited by the Mayor to enjoy the show, then make arrangements to stay. Surely a ride through that glorious section after seeing the products of Sonoma's hills and valleys, would tempt "him who in the love of Nature holds communion with her visible forms."

War and Fruit.

Dried fruit on shipboard cannot be insured, on account of danger of capture, and chances are that it will have to be held for the present.

Pajaro dried apricots are mostly in the hands of packers.

Butte county prunes have been dragging on account of the high price, but the war will have an effect on foreign production so that there will probably be a big demand, especially since so many able bodied men have been withdrawn from the field of production.

Santa Clara dried fruit packers are asking growers to withhold delivery for the present until shipments can be made.

Sales of prunes to Europe were light owing to the heavy crops in Bosnia and Servia. But these will scarcely be marketed and a demand for California fruit may be felt later.

California fruit worth $1,500,000 is on shipboard in British vessels.

Grain elevators at Port Costa are full, hundreds of carloads have been coming in, the ships would not take it until they could insure their cargoes, they can't insure while the German cruisers are running around loose. The grain can't be shipped back home because the warehouses there are full. Looks like there isn't room in California to stack its grain crop.

There is a proposed law in Congress to permit American registry of foreign merchantmen. Since the United States is neutral, these boats would be safe until some gunboat would capture one and get America into the war. Much of the grain was to go to Great Britain, who might now use her navy to protect the carriers of her food supply.

The Grange Co. of Modesto has quit buying grain until shipment becomes possible.

Raisins consigned to Europe by the Associated, were not on the water when the war opened. But James Madison estimates only $10,000 worth of San Joaquin valley dried fruit anywhere en route to Europe.

Deciduous.

Railroad strike conditions East caused the two Kings county fresh fruit packing plants of the Stewart Fruit Co. to close, laying off 100 employees.

Nine carloads of peaches were canned in one day in one factory at Selma recently costing $1500 for labor alone. The output is nearly 100,000 cans daily.

Ten carloads of peaches were shipped East from Hanford in one day, the canners at Hanford used 80 tons, and 30 tons more were shipped out to neighboring canneries. The Tuscans proved unusually sweet, firm, and well colored.

A new peach cannery at Cucamonga, San Bernardino county, began operations this week.

From Hollister, San Benito county, about four cars of peaches and pears are being shipped daily.

The apple crop around Fort Bragg and Mendocino City is fine though later than Sonoma county because of cooler climate. Many apples, principally Jonathans, were set out here last winter.

Sebastopol had shipped 75 carloads of Gravensteins until August 1 at $1.25 to $1.50 per box, sending them to all parts of the world. This is estimated to be 60% of the crop.

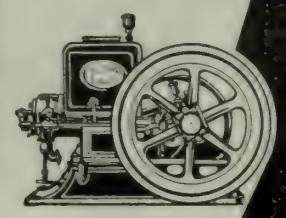
J. P. McDonell reports 1000 boxes of Gravensteins from 85 trees.

At Sebastopol the apples are hauled in lug boxes to the Apple Growers' Union packing house and packed by a Growers' Union crew. Of 7000 lbs. sent in from the Barlow ranch, one week recently, only 34 lbs. were culled.

Chico is shipping pears and peaches, one house having recently sent a car of pears to Omaha and one of peaches to Portland, Oregon.

E. Dudley of Selma averaged over 400 lbs. of plums from 93 Green Gage trees, having sold the fruit under contract at $20 per ton.

Pajaro valley apples will probably bear 75% of a crop.



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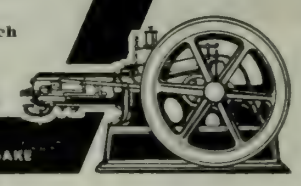

Citrus.

The Tulare county fumigation campaign in which 15,000 citrus trees are to be treated for the gray scale, is well under way with over 200 tents in use. While there are no wet fogs at night and no wet intercropped vegetables to work in, it is impossible to get all the help needed.

Lemon prospects in the Porterville foothills are for the best quality ever, and two months earlier than last year.

R. S. Vaile, horticultural commissioner for Ventura county, has been offered superintendency of the new University citrus experiment orchard soon to be established.

The Porterville Citrus Association is reported to intend to pick oranges only after they become of a standard color. This is all right if the color always corresponds with the proper amount of sweetness. The same color in another section would not mean anything as to sugar content.

Navels and Valencias are putting forth a heavy second bloom not only in San Bernardino county, but all over southern California.

The refund of overcharged freight rates recently ordered for lemon growers by the Interstate Commerce Commission is now reaching the growers.

What a private brand is worth on fruit shipped East is shown by the oranges and other fruit shipped this season from the C. O. Cowles' place near Lindsay. They commanded 15 cents a box over current quotations.

The last week in July Riverside shipped 57 cars of oranges, Redlands 70 cars, Florida 16 cars.

Grapes.

The Selma Fruit Co. will pack Selma raisins this year after a two-year suspension during which this crop was packed by the Associated Raisin Co. The Associated's plant has been leased for this purpose.

Early this week a special raisin express train drawn by two locomotives and consisting of 70 cars was started to the Eastern market. This was part of over 100 cars of raisins that left Fresno that day and part of the little remaining 1913 crop. It was decorated with placards to advertise California raisins along the way.

Tokays at Lodi are to be $20 per ton until September 10, after which the price will drop to $12.50. The buyers seem to be making these prices to the growers.

A car of Thompson Seedless from Dinuba testing about 20% sugar recently brought $2.10 per crate in the East.

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Olives and Nuts.

The building of the California Ripe Olive Co. at Oroville is completed and the equipment will soon be installed.

Shasta county has about 500 acres of olives, mostly in the Anderson district.

Half a dozen good-bearing walnut trees on a ranch in Tulare county inspires the owner to set out 20 acres.

Three carloads of walnuts held over from last year by the Fullerton Walnut Association because of poor quality, were recently sent to New York routed via Panama Canal.

A big walnut tree in Yuba City (said to be the biggest one in the world) is a large part of the evidence on which orchards have been planted in Sutter county. These orchards doing so well have generated much enthusiasm in H. P. Stabler, county horticultural commissioner for that section.

The Canal is to be used for Chico almonds this year. The crop there is estimated at 35 carloads. The harvest is beginning now.

Vegetables.

The Fort Bragg cannery, recently started, putting out over 1000 cans of peas on the first afternoon.

Early planted beans in Ventura county are showing undue proportion of vines, seeming loth to bear pods, perhaps due to lack of pollenation. Later planted ones are better.

Modesto watermelons dropped to $2 per ton. A grower at Lodi tried unsuccessfully to give away a load he had taken to town to sell.

Turlock melons started at $15 and have descended to $2. Cantaloupes descended from $1.50 per crate to 50c. Prices will probably rise later in the season.

One Delta grower claims $2 net per sack from 25 acres of onions for a shipment of 30 cars, each containing 300 sacks.

Field Crops and Grain.

Cotton picking has begun in Imperial valley. Many volunteer plants are now bursting their bolls sixty days ahead of the usual cotton harvest.

The U. S. Department of Agriculture estimated the California cotton crop on July 25 at 100%, whereas the best in other states is 89% and runs down to 71% in Texas.

Manchurian corn recently arrived on a Japanese steamer and was seized by the Department of Agriculture, as had two previous shipments. It was found to be weevil infested, but still may be ground up for stock feed.

The estimated yield of Sacramento valley rice this season is 500,000 sacks.

Grain threshing by combined harvesters was just ending in the lower San Joaquin last week.

Rice growers last year consigned their crops on commission and were disappointed. They will have two other chances this year, either to sell outright to a San Francisco milling company or to sell to them on a percentage basis.

Wheat and barley in the Tulare Lake region are still far from being harvested.

Transportation

Lemon freight rates of $1.15 per hundred pounds from California to Montana, and citrus rates of $1.66 to Wyoming were recently declared unreasonable by the Interstate Commerce Commission.

The Northern Electric is adding to its force to handle the fruit of its territory in the lower Sacramento valley.

California canned fruit, vegetables, and fish via Panama Canal to New York is 30 cents per hundred pounds as against 85 cents on the railroads.

Dried fruits and vegetables will have similar rates. The time en route will be about 20 days.

Western Pacific traffic arrangements with the Tidewater Southern gives Modesto another transcontinental line.

A train through Imperial valley from Los Angeles was recently restored after having been taken off a few weeks ago.

Irrigation

Government reclamation work is to be paid by annual congressional appropriations, instead of from the total reclamation fund at the discretion of the Interior department.

The Reclamation Record, telling the news of the service and articles on problems of irrigation and drainage, will be sent free to all water users on application to the Reclamation Service, Washington, D. C. The Record contains an "Open Forum" where water users may make their complaints and get legal advice from the chief counsel of the Reclamation Service.

Placer county water users are taking advantage of a recent reduction of rates in Bute county by the Railroad Commission, to complain of the rates charged them by the Pacific Gas & Electric Company.

Fair Oaks has an irrigation system under private management which would be satisfactory but for the fact that with what seems to be only about enough water for Fair Oaks, the company is supplying the colonies of Carmichael and Cardwell too. This produces a universal scarcity on account of which the formation of a public irrigation district to take over the system has been agitated for several months. Action is progressing on this line. Eighteen thousand acres are affected.

An irrigation run in Modesto district takes 30 days. The fifth run for this season is on now and the mountain snow indicates that, for the first time, there will be enough water to complete it.

The Inland Waterways Association of California will hold its convention September 24 to 26 at Stockton. This is mostly for Sacramento-San Joaquin valley water users. The Newlands bill will be discussed particularly.

The Chico Business Men's Association is planning to interest the Reclamation Service in the irrigation of 150,000 acres in Butte county under similar provisions to the Orland project where the water users pay $1.25 to $2 per acre per year until the permanent water right is acquired at a total estimated cost of $45 per acre for maintenance and water payments until it is paid for.

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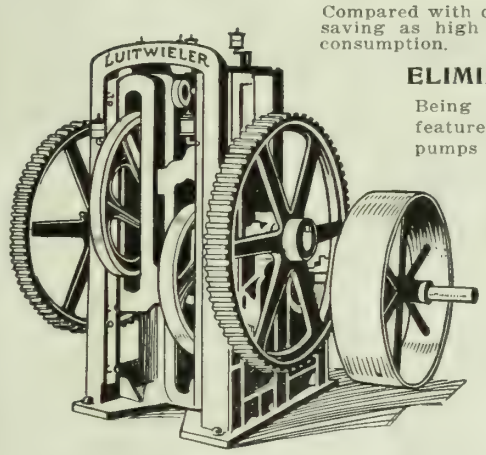

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Fruit Growers' Convention.

The next Fruit Growers' Convention will be held at Los Angeles November 9 to 14. The plan of the convention was described in these columns in the issue of June 13. It will be given later in more detail.

Cured Fruit Bulletin.

The California Cured Fruit Exchange announces that it will soon move headquarters to San Francisco. The following quotations are of interest:

"Fruit cut too green loses both weight and color.

"We have to tell you that the selling market on both apricots and peaches is lower—peaches especially. Some packers reported offering new crop peaches low as, bulk basis, Standard 3½c; better grades at proportionate prices, which will amount to not to exceed 3¼ to 3¾c, orchard run, to growers. We believe that these sales are being made short by speculative packers, because don't believe that any growers have yet sold peaches as low as packers will have to buy to resell at prices above stated. We surely don't advocate selling peaches so low, because we well know that growers cannot produce peaches with any profit, even when as good a crop as this year, to sell at much below 5c, orchard run.

"We have sold half or more of the peaches our members will have this year, mostly for August-September shipment, at prices well above the present market, so are in a strong position for giving our members and others who may come to us good returns for their peaches, compared with what outside growers may get."

SLIP-JOINT WOOD FIBRE PIPE

Various slip-joint pipes for irrigating uneven ground, or to avoid the use of checks or flumes, are quite largely used in California, and pipes of many materials are offered by enterprising manufacturers. During last year pipes were used in irrigating the lawns at the Colorado Agricultural College, which are graded so that surface irrigation in the ordinary way has been very difficult.

Wood-fiber pipe six inches in diameter and in five-foot sections were ordered. These are so constructed that they will join together easily by a slip joint, and may be laid along the surface of the ground, thus delivering the water at any point desired. The pipes are very light, and therefore easily handled, and have proved a success in every way.

For a farmer who has a field with knolls or ridges in it, these surface pipes could be used to great advantage, and will prove to be very economical in the amount of water used. The installation is very simple. The pipes are delivered at the edge of a field where the irrigating is to be done. The first pipe is connected with the irrigating ditch by means of a canvas dam, and irrigation commences next to the ditch.

When the water has spread as far as desired from this first section of pipe, another section is attached, and in this way the pipe extended gradually, covering all of the ground thereunder, and when a ridge or knoll is reached these pipes will carry the water to the top of the same and there deliver it with practically no loss at all at the joints, although the pipe is under pressure. Thus the entire field can be irrigated with only sufficient water to thoroughly wet the entire surface.

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The Cost of State Accident Insurance.

To the Editor: In your issue of July 11 you have an article from Mr. Pillsbury in relation to the "Workmen's Compensation Act," in which he invites criticism. There is one paragraph especially that attracted by attention. He writes: "If the wages were to be paid in full from the fifteenth day on to the determination of the disability, instead of 65% of them, there would have to be added to the rate six cents on each $100 of payroll."

Does that mean that the actual cost of carrying the risk for 35% of wages is 6 cents on the $100 of payroll? Carrying the risk for full wages would entail no extra work over carrying for 65%—to the insurance company.

If that is a logical line of reasoning, and I cannot see why it is not, then the actual cost of the accident insurance as now provided for farm laborers is 12 cents per $100 of payroll plus the necessary "overhead" charges. Our present rate, $1.50 per $100 of payroll, then provides 12 cents for the injured hired man and $1.38 for the Industrial Accident Commission, and no wonder they are anxious to get all us farmers in. C. R. WATSON.

COMMENTS BY MR. PILLSBURY.

To the Editor: Inasmuch as it is not improbable that others than Mr. Watson may find the paragraph he refers to an occasion for stumbling, I beg leave to say that the paragraph deals only with temporary disabilities. It would have been better if I had so specifically stated in that paragraph. It would have made the fact clearer, although the next paragraph in the article to which he refers takes up the subject of permanent disability.

Of the 26,294 injuries to employes which took place between the first day of January and the first day of July, 1914, it is estimated that only eight and three-tenths per cent will be compensable under the Act except in so far as medical, surgical, and hospital services may be required, and, of those compensable, by far the greatest portion will be well and back at work within twenty-eight days from the time of injury.

But, while the greater number of all those injured who are entitled to compensation are injured temporarily, yet, of the total cost of compensation, by far the greater part will go to those who are injured permanently or to those who are killed. For instance, in Germany it has been found that, while 78% of all those entitled to receive compensation get well and return to work within 13 weeks from date of injury, yet the 22% who are killed or so seriously injured that they do not get well and return to work within thirteen weeks consume 84% of the entire cost of compensation. Consequently, we see that the six cents added to the rate as representing the 35% borne by the injured persons merely covers that part of the temporary disabilities which last longer than two weeks from the date of injury, but are not permanent in their effects. Had Mr. Watson read a little more carefully he would have noted that the very next paragraph in the article set forth the fact that the rate to cover the employes' share of the full cost of permanent disabilities and death benefits would have to be $1.51.

To look at it in another way: of the $1.50 rate which the employing farmer now has to pay for compensation coverage for his men, about 45 cents is allowed to cover the medical and surgical cost and a very considerable part of this goes to cure those who will be back and at work within the first two weeks and will not be entitled to any other compensation whatever; about 12 cents is expected to cover these temporary disabilities that do not recover within two weeks but will not result in either permanent disability or death. The remaining 93 cents is expected to cover permanent disabilities and death benefits.

To show how wide of the mark Mr. Watson's assumption that $1.38 out of the $1.50 rate must go to what are commonly known as "overhead" expenses, really is, it will be sufficient to say that the overhead cost of the Compensation Fund for the first six months of its existence was seven and one-tenth per cent of the premium paid, or a little more than 10½ cents of the $1.50 on the $100 of payroll which the farmer pays, and this overhead expense was much augmented by the fact of having to create a new institution outright. Furthermore, it now seems quite likely that a substantial rebate will be made to those who insure with the State and that next year's rate will be considerably lower than the experimental rate being charged this year, but of that we cannot now certainly speak, inasmuch as our experience is limited to only one-half of the first year. A. J. PILLSBURY,
Chairman Indus. Accident Com.
525 Market St., San Francisco.

EIGHT-HOUR MULES AND MEN.

To the Editor: In answer to Mr. Hillers, who spoke in favor of the eight-hour law in your issue of July 11, I wish to show it will affect us as orchardists. In the first place Mr. Hillers seems to be entirely ignorant about agriculture, for he speaks of mules going 2¼ miles per hour for eight hours instead of 2 miles per hour for ten hours. I would like to inform him that mules and horses have just a certain pace when working, whether they work five or ten hours. If they are forced to break this pace it will keep a man busy applying the whip. Besides this, forcing them out of their natural gait will do them more harm in eight hours than their natural gait would in twelve. Again, a mule might be pretty stubborn about going a quarter of a mile faster per hour, unless the champions of the eight-hour law would interpret it to them.

As to a man doing as much in eight hours as in ten hours, that is not true and such a claim is unfounded. I have men working ten hours, and if any man can do the work they do in eight hours, I will take back all I have said. In contract, or day work, if you like, those that work ten hours do not pick near the amount of fruit that those working twelve do.

Again, it would be impossible to secure the extra help which we would have to use if the law should pass. Help is hard to secure when the fruit season gets in swing, and right now orchardists have apricots on the ground for the lack of pickers. If we depended on white help we would have to quit the business. I am not in favor of Japs, but this law will get them lots of land to lease. For myself, I do not employ Japs, but employ Spaniards and Italians. The white men that come out into the country are union men out of a job because they are not capable of holding a job or are not inclined toward work. Most of them have disinclination to work and try to see how little they can do and draw pay. They never can be depended on, and stay only a very short time. I am speaking not only from my own experience, but from the experience of all the rest of my neighbors.

In the early days the men worked from dawn till dark; now they own their own ranches, because they did not have all the leisure time the eight-

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hour law affords to loaf around saloons and poolrooms. We can't get any more of that good, old-time help because they are all land-owners themselves now, and the present generation has already too much time to loaf now. If this law passes, and then the minimum wage law, everybody will be breaking his back to become a common laborer, as it will be more profitable than the professions. Why an education if such opportunities are offered the ignorant, unless the farmhands be given culture courses?

The orchardists of moderate means or those starting in the business with mortgages on their lands, cannot compete with the eight-hour law. It is impossible. Only those well established could afford to compete against it.

In conclusion, I wish to state that this champion of the eight-hour law, if he be a farmer, is probably one of those unlucky ones that had a lot of land wished on him and did not get it by steady hard work, or else some city man, ignorant of farming, or else some one's hired help, who has no ambition to better himself.

Cupertino. A SUBSCRIBER.

A SITUATION WHICH THE 8-HOUR LAW WILL AGGRAVATE.

To the Editor: I do not know whether the eight-hour law is the law we really need or not to relieve the country of a situation that promises to become really dangerous. We have so many laws now that one often finds himself transgressing unknowingly.

That the laboring man needs some protection from some source is very evident, but I think the eight-hour law is far insufficient to furnish the required protection.

The farmers' interest and the laborers' interest should be identical, but as a rule the farmers in this section of the country have so abused their laborers that there is no tie that binds. All the farmer wants is from ten to fifteen hours' work per day, and all the laborer cares for is the pay. If the farmer could get his crop raised and harvested without paying out anything for labor, he would do so. If the laboring man could live without work and have all the necessities of life, he would refuse to work. So when the laboring man goes to the polls he will vote for the eight-hour law and the farmer will vote against it.

But why this eight-hour law? As one man asks, Who started it, and for what purpose? Nobody seems to give a satisfactory answer to these questions. Well, let's see. If you were a poor man, would you enjoy working ten hours in the hayfield for $1.50 per day, or in the dry yards, orchards, and vineyards eleven hours for $1.50 or $2 per day? Would you like to get up in the morning at 5 and harness eight or ten mules, feed, and clean out the barn before breakfast, then work until 6 p.m.; unhitch, bed down, feed, and get your day's work done about 7:30 p.m., all for $30 per month?

If you think the common laborer is a sovereign by right divine, just try it yourself. A married man cannot make a living working on a farm at the going farm wages and give all his time to his employer. The eight-hour law would give him a few hours for his own. The law might help the single man in many ways, but as I am married, I leave him to defend his own rights.

[The writer at this point introduces a fierce arraignment of the county authorities for interfering with assemblies of laborers such as came under the strong hand of the law last summer. No good citizen can quietly listen to such an argument. We cut it out, although to admit it would help to defeat the law which is supported by such an argument.—EDITOR.]

When the hay and the grain, the fruit and the nuts are ready for harvest, the weather is uncertain and the time is limited, the farmer extends the glad hand to every old "blanket stiff" who comes along. But when the crops are harvested and the work is done, and labor collects on a vacant lot in the cities, and the police club them and the fire department water them, no farmer utters one word of protest or contributes one cent to a transportation fund to pass the army of unemployed out of the State. Hence the eight-hour law.

Again, there is a law in this State whereby a man, married or single, without money or visible means of support can be arrested, tried, and convicted of vagrancy and worked on the chain-gang. He may own his arms, legs and strength, and may be not willing to sell his labor at the rate of $1.50 per ten or fifteen hours, but according to law must either sell or go to jail, while the land-owner can own any amount of land, thousands of acres, allow it to produce little or nothing; can even allow it to revert to the State for taxes, and a plutocratic supreme court will give him three years in which to redeem it. There is no law against this wilful waste of good land. There are thousands of acres in the State that for the want of cultivation and improvement are actually wasted every year while the toil and industry of the energetic worker is enhancing their value.

There is a 400-acre farm in this section that is for sale at $200 per acre. This year's crop will not pay interest on the mortgage already on it and the taxes. It has not paid 3% interest on the price asked for it during the past ten years. This 400 acres of land, if properly handled, would make homes for 20 families and furnish profitable employment for at least 40 people. But where is the man who can afford to pay the price asked with interest at 6%?

I can show you land that you cannot buy for less than $250 per acre that produced a crop of very poor hay last year and a crop of burr clover this year. The owner rides in an auto and makes no pretense at work and howls about the eight-hour law. He is a vagrant land-owner the same as the man who does not work and, having no means of support, is a "vag" in the eyes of the law.

According to law a man or a company of men could own the whole of the Sacramento valley, put a fence around it and tell everybody else to keep off. When the price suited them they could sell, take a mortgage on the land, and bind the buyer and his posterity for years to come.

If the eight-hour law will take any of this unearned increment off of land and put it down where the homeless worker can buy a small tract on which to build a home, then I say let us have the law and the sooner the better for all.

But if the eight-hour law fails to do this, let us have another law which will make it unlawful for any man to sell land for more than it is paying 7% interest on. Such a law would not hurt the worker, but would put some of these real estate speculators out of business and make a lot of large land-owners get busy.

I have tried to show you why we laborers want something done. We are tired of working long hours for small pay while acres of good land produce no food. C. R. MARTIN.

Terra Buena.

[For the adjustment of relations on an enduring basis, it is desirable that opposing views be clearly stated in order that all may intelligently consider them. Your writing, though showing no proper appreciation of the function of the State in maintaining law and order and saving us from confusion and anarchy, does disclose some signs of an open mind and a desire for the rights of all. For this reason, though your argument disregards more rights than it enforces, we admit your statement. But an arbitrary eight-hour law is not a step toward greater prosperity for labor which you desire. It will surely increase the hardship, and disorders which you describe and help no one.—EDITOR.]

POWER FROM LOW GRADE OILS.

The utilization of cheap, low grade, California distillates, instead of gasoline, is a subject that many farmers are interested in, especially among those who use engine power for pumping purposes.

The modification required from the usual type of carburetor are, preheating of the air and the introduction of a small amount of humidifying water. Several manufacturers are now equipping their engines with carburetors with these modifications. Many farmers are making over their gasoline engines to burn cheap fuel oils by arranging a water drip at the entrance to the air supply pipe and are securing good results thereby.

Professor G. E. P. Smith, Irrigation Engineer of the Arizona Agricultural Experiment Station, who has been studying the new types of oil engines recently, is of the opinion that the humidifying water is the more important condition for burning tops and other cheap fuels. Pre-heating the air is necessary, also, in the winter time; but during hot weather, when most of the pumping for irrigation occurs, preheating is not so essential.

By the simple expedient of providing a water drip, any engine can be converted into a top burner for the summer, while engine distillate can be used in the winter. At small expense, however, a special carburetor and connections can be installed, permitting of the use of the cheap fuel at all times.

800 ACRES FOR RENT

in Southern Santa Clara County

A No. 1 LAND, suitable for raising seeds, gardening, etc.

Will rent as a whole or in subdivisions. CASH RENT.

For further particulars see or write

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Dealers in PAPER — 37 FIRST ST., SAN FRANCISCO; Blake, Moffit & Towne, Los Angeles; Blake, McFall & Co., Portland, Ore.

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Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

TREES AND NURSERY STOCK.

BURBANK'S SPINELESS CACTUS—Proven varieties with cultural instructions that will insure success. I have 100 tons per acre on slabs planted last August. Correspondence invited. J. A. POWELL, So. Dos Palos.

BURBANK'S CACTUS—Get my prices. Try sample box Cactus Candy, 40c. You will be delighted. Haydon's Nursery, San Juan Bautista, Cal.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

LAND FOR SALE.

VICTORIA, AUSTRALIA WANTS SETTLERS
Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

FOR SALE—130 acres, well improved land, 40 acres peaches, 5 acres grapes, 17 acres almonds, good house and barns. Finest climate and best drinking water in county, also a 5250 gal. water tank. Located 2¼ miles south of Burson, Calaveras county, Cal. Address H. Pennington, Burson, Cal., Owner.

FOR SALE—67-acre ranch one mile from Durham, 20 acres in 5-year-old almonds, 10 acres in 5-year-old English walnuts, 10 acres in 3-year-old Mission olives; balance in alfalfa and grounds. Plenty of water to irrigate same. Address the owners, COOLEY BROS., Durham, Cal.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg., San Francisco.

WANTED.

COLLIE PUP WANTED—Male; state age, color and price. J. J. YOUNG, 420 Market St., San Francisco.

WANTED—A capable man for ranch foreman; must understand general ranch work. R. D. 2, Box 70B, Modesto, Cal.

READ my advertisement on another page. I have just what you are looking for in lands. G. M. Rea.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

COLLIE DOGS of choicest breeding. Ideal for show bench or farm. Fine companions. Puppies 3 and 7 months old. Also grown stock. Prices reasonable. BROWNDALE KENNELS, Redwood City, Cal.

IN THE FALL MONTHS every farmer requires manure, lime and fertilizers. Now is the time to figure on your wants. Address, for information, Box 10, Rural Press.

"SMITH'S PAY THE FREIGHT." To reduce the high cost of living, send for our Wholesale to Consumer Catalogue SMITH'S CASH STORE, 106 Clay St., San Francisco.

WANTED—A carload of stock hogs. W. E. RAWLINGS, Edenvale, Cal.

BEES.

It pays to keep bees on the farm; raise your own honey, make considerable profit besides. We can supply gentle Italian bees at $3.50 for five-frame colony, $5 for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. SPENCER APIARIES CO., Box 12, Nordhoff, Cal.

Calves on Milk

[Written for the PACIFIC RURAL PRESS]

"One of our calves is worth two years of its mother's milk That's why we are feeding 100 gallons of fresh new milk per day rather than separate it at the creamery, which we operate all the time. We must keep the calves growing," said G. L. Stearns, dairy foreman of the Stanford University's big ranch at Vina, California.

Four lines of little black and white calves were standing as close together as they might squeeze in the white-washed calf barn, each with its head through a stanchion and over a feed trough. Most of them were absorbed in and absorbing the warm contents of handleless porcelain buckets.

Mr. Stearns, under direction of W. G. Stimmel, general superintendent of the ranch, begins raising calves by selecting their parents, of which all are now purebred Holsteins.

"We would rather sell animals than butter. There is more money in it. We advertised and sold out all our grades, beginning last November, because in a herd of purebreds and grades, we found it nearly as expensive to raise a grade as a purebred."

No cow remains on the ranch unless she produces over 300 pounds butter-fat per year as indicated by the testing of one day's milk per month and the weighing of all she gives. The whole herd of more than 100, heifers and all, averaged 350 pounds of fat last year.

Some of the cows are a little over-refined, so one of the three bulls is of rugged, heavier, more vigorous type, and he will be used to give larger, stronger frames and greater stamina to their calves.

The herd sires are expertly and carefully selected, first with reference to the records of their relatives, and second with reference to their individual type.

They are not allowed to run with the cows, which are bred from November to February to get calves the latter half of the year. None, however, are bred under 20 months of age. And mornings when the cows are turned into the lots they are watched so that those wanting to breed may be separated and not ride any that may be heavy with calf.

The new-born calf may suckle just once, because thus it is easier to wean both the cow and the calf. It is then turned into a little pen with a few others and taught to drink its own mother's milk. After a few days it is turned into a larger pen where hay is kept handy and the calf learns to eat, being fed whole milk with the rest. When it has learned to rustle for itself, it is turned to green pasture with a band of others of its own size, receiving hay and milk twice a day. When grass in one lot gets short, the calves are turned into a fresh one, which is usually available. At a month old, they are fed individually in the stanchions, all they will eat (a handful at first) of a mash made by mixing 50 pounds bran, 50 pounds ground oats and barley, 20 pounds cornmeal, 10 pounds oil meal, but the grain fed varies with the condition of the pasture. Everything is done to keep the calves growing all the time; for Mr. Stearns figures they are losing money when growth stops, because the expense of feeding continues anyway.

The first or second day after a calf is dropped, it is marked with a numbered band through its ear, the number corresponding with a description and pedigree on record.

On the first of the following month applications are sent in for registry. Since the association changes names sometimes, the permanent nameplate is not made until notice of registration is received. Then, with dies, the name and number are stamped on a brass plate which is fastened to a collar with copper rivets. The collar is worn until the heifer has her first calf.

Mr. Stearns feels strongly that cows as well as people should have family names. A calf from the De Kol family should have "De Kol" somewhere in its name to indicate to intending purchasers something about its breeding. The fanciful Spanish names given the old cows of the herd leave one at sea as to their breeding unless the records are searched.

Twins are vealed because they are likely to be non-breeders. Any other inferiority dooms the new calf to the block. The tuberculin test is applied once a year. The older bull calves are kept separate from the heifers and kept in good flesh all the time. They are so tame a stranger may walk among the bunch of them in pasture. It is of distinct advantage to show the intending buyer that they are neither wild nor fierce. Rings are put in their noses before they are two years old; they are kept in the barn till the soreness is gone, then taught gently and firmly to be guided with a staff.

COMPLETE DISPERSAL SALE.

Wm. Bond's Herds of REGISTERED SHORTHORN CATTLE an PERCHERON HORSES to be Auctioned One Day Only

THURSDAY, AUGUST 27.

ABSOLUTELY NOTHING RESERVED.

Here is a chance to get good sound registered Percheron mares in foal to Imp. Inquiet 79239 or the pick of a fine lot of registered stallions, many of them State Fair winners.

My herd of registered Shorthorn cattle contains much of the blood that has made Shorthorn history and includes such animals as Dora D. D. 3rd and Clover Leaf 4th, sired by King Edward, Greenwood Mary by Hillcrest Hero, and Maid of Gloster by Brampton Victor, etc.

Everything goes—cows, heifers, bull calves and suckling calves. An excellent chance to get foundation stock.

CATALOG NOW READY.

WM. BOND, Newark, Cal. **Ranch at Mowry Station.**

The only practical feed that meets fully the vital necessity for bulk, palatability and succulence.

YOU have only to watch your cattle eat Larrowe's Dried Beet Pulp just once to appreciate how palatable it is. They take it ravenously. They like it because it is a natural vegetable food. Even while in the pasture they will eat it with great relish, and when deprived of green food do not suffer in health or fall off in milk production if a suitable proportion is included in their ration.

Larrowe's Dried Beet Pulp is as digestible as it is palatable. It also makes digestible the entire ration in which it is included, because it makes the whole loose and bulky. This one fact explains the reason why, while rations can be made up of various feeds so that they will contain equal nutriment, judging by analysis, the Dried Beet Pulp cannot be omitted from any ration without a distinct loss that affects both the health of the cow and the amount of her milk. A light, loose food in the cow's stomach is open to the action of the gastric juices, while a solidly massed food repels them and makes digestion difficult. Larrowe's Dried Beet Pulp swells from 5 to 6 times its bulk when moistened. It is practically the only feed which does not become a solidly packed mass.

PROVE ITS VALUE WITH ONE SACK

Go to your feed dealer today and get one 100-pound sack and test it on one cow whose milk record you know. You'll get instant results—1 to 5 pounds more milk per day from each cow.

Be sure you get "Larrowe's." It is never blackened or burned. Always uniform. Keeps indefinitely.

READ THESE CONVINCING LETTERS

From Mr. C. A. Puffer, Prop. El Casco Dairy Ranch, El Casco, Cal.

"We heartily recommend Larrowe's Dried Beet Pulp as a milk producer and a feed that keeps the cows in good condition. We use our feed four parts beet pulp to one part bran, and feed it wet. During the winter season we feed from three to eight pounds (dry weight), according to the amount of milk the cow gives.

"When the cattle are on good grass, we feed three pounds of pulp per cow, and consider that we get good returns for money so spent. We prefer your beet pulp because of its uniform condition and freedom from dirt and disagreeable odors. It gives us pleasure to express our appreciation of the prompt attention and courtesy we have received from you.

"(Signed) C. A. PUFFER.

"P. S.—We have also gotten good results from feeding beet pulp to calves that are from four to six months old."

From McAlister & Son, breeders of Pure Bred Holstein-Friesian Cattle.

"As a user of Larrowe's Dried Beet Pulp, it gives me pleasure to be able to recommend it to dairymen of California as an economical milk-producing feed. I consider that there is no concentrate that will take its place and give succulence to a ration like Larrowe's Dried Beet Pulp.

"I have used it continuously for the past three years, and fed it during some official tests which I made with some of my registered Holstein-Friesian cows, the results being most satisfactory. One heifer with her first calf milked over 65 pounds a day on this feed. The cows not only give an increased flow of milk while on beet pulp, but also keep up in flesh and are enabled to retain their healthy and vigorous condition.

"(Signed) JAMES W. McALISTER, JR."

LARROWE'S
MOLASSES-DRIED BEET PULP

is preferred by many feeders on account of its sweetness. Just the plain beet pulp with beet molasses dried. Fine for fattening; also for horses, hogs, etc. It is put up the same way as the plain and sold on the same basis. Ask your dealer for it.

Write For Our Booklet "Profitable Feeding"

With full information and feeding instructions. Sent free on request.

THE LARROWE MILLING COMPANY

607 CENTRAL BUILDING **LOS ANGELES, CAL.**

Neither bulls nor heifers are sold to be delivered before they are mature enough to show their value. Heifers must have had at least one calf. This is partly because the best breeding in the world may be nullified by careless or ignorant handling during the period of growth; and the reputation of the ranch would suffer. When Mr. Stearns raises his well-bred stock to maturity he knows that it will be a credit to the ranch for production and breeding purposes; for the other kind goes to the butcher.

ABOUT PUREBRED BULL ASSOCIATION.

To the Editor: I am just starting a dairy in this section and find that what we lack most is good cows, as there are no registered herds in the valley and but one registered bull that I know of. I should think that we could get association bulls, the same as we do stallions. Are they working along these lines anywhere in this State?—F. E. S., Browns Valley.

[So far as know there are no purebred bull associations, or community breeding associations in this State, although there has been some talk of organizing a similar association in Tulare county.

What you say of conditions in your county may be found in most all sections of the State, especially where dairying has not as yet become a highly specialized industry, for there seems to be a general feeling among small dairymen that they cannot afford to invest in a registered bull for so few cows.

In the eastern States the same conditions have been overcome to a certain extent by forming either bull clubs or community breeding associations. The former is where a number of small dairymen pay a certain sum as a service fee for the use of a registered bull. In this way one man owns the bull and other dairymen bring their cows to the bull for service.

The community plan is very similar, except that several farmers purchase a bull outright, each buying a share of stock, the same as our stallion companies do in this State. By having several of these small organizations, a bull is used for two years by one branch, and then traded or sold to another branch for the bull that they have been using for the same length of time.

The objections to these plans, which have been commonly heard among dairymen in this State are: the inconvenience of having to take a cow some distance from home in order to breed her; and the fact that such plans would be apt to spread such contagious diseases as aborption, which would be a serious drawback in many of our larger dairy sections where this disease is prevalent.

After some correspondence with associations of this kind in the east, we find that they have no positive way of overcoming either of these objections, except that the man who takes care of the bull is careful not to breed cows showing any signs of disease.

Theoretically, either plan is ideal for increasing the production of our dairy herds and it may be that in certain sections such plans could be successfully operated in this State.—EDITOR.]

V. C. Bryant, of the experiment station staff, recently examined the territory about Athlone, twelve miles south of Merced. He pronounced the outlook for development of dairying very favorable in this locality and encouraged its serious consideration among farmers.

BORAX PREVENTS FLIES.

While the "swat the fly" campaign, traps, and other devices for reducing the number of typhoid carrying flies are of value, they are of less importance than the prevention of breeding.

The U. S. Department of Agriculture has found that a small amount of ordinary borax sprinkled daily on manure, garbage, refuse, open toilets, etc., and less often on damp floors, crevices in stables, cellars, or markets, will prevent fly eggs from hatching.

Either 0.62 of a pound of borax or 0.75 of a pound of calcined colemanite (crude calcium borate) kills the maggots and prevents practically all of the flies ordinarily breeding in 8 bushels of horse manure from developing.

In the case of garbage cans or refuse piles, 2 ounces of borax or calcined colemanite, costing 5 cents per pound upward, usually prevents flies from breeding.

While it can be safely stated that no injurious action has followed the application of manure treated with borax at the rate of 0.62 pound for 8 bushels, or even larger amounts in the case of some plants, nevertheless borax-treated manure has not been studied in connection with the growth of all crops, nor has its cumulative effect been determined. It is therefore recommended that not more than 15 tons of the borax-treated manure should be applied per acre to the field.

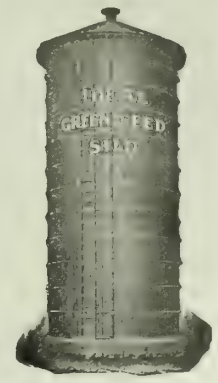
In feeding to hogs garbage that contains borax, care is recommended, especially when the animals are being fattened for market. Borax is not a very injurious substance and the feeding of garbage that contains it to hogs is not likely to be a serious matter. On the other hand, borax in large quantities does produce gastric disturbances, and for this reason a certain amount of care is advisable.

The method for using this substance in the case of stables is to sprinkle the borax or colemanite in the quantities given above, by means of a flour sifter or other fine sieve, around the outer edges of the pile of horse manure. The manure should then be sprinkled immediately with two or three gallons of water to eight bushels of manure. It is essential, however, to sprinkle a little of the borax on the manure as it is added daily to the pile, instead of waiting until a full pile is obtained, because this will prevent the eggs which the flies lay on the fresh manure from hatching. As the fly maggots congregate at the outer edge of the manure pile, most of the borax should be sprinkled there.

The cut through Knights Landing ridge which was enjoined a year ago has been started again and stopped amid excitement. A plan for drainage of the basin above, which was satisfactory to the farmers, was abandoned for one obnoxious to them, and that is what the courts put a stop to.

The consul at Bristol, England, expects enlarged shipments of California fruits and other products when the Canal is opened. Our navels have been selling there at 4 cents each, and the trade is expected to increase when lower freight permits lower prices.

CUT YOUR COST OF PRODUCING MILK



One of our customers who is using two 20 x 40 silos says:

"By siloing my first and last cuttings of alfalfa I cut down my mill feed bills over $4000.00 in one season, and the feeding of the Ensilage with chopped Alfalfa Hay increased the milk production from my 300 cows at least 10%. I consider the Silos saved their original cost the first season."

IDEAL GREEN FEED SILOS are a **DE LAVAL PRODUCT**, made of the best materials in the best equipped mills on the Pacific Coast, and in every essential feature are built to suit California climatic conditions and to produce good Ensilage.

You would not purchase a leaky can for preserving fruit. Why take chances on a leaky silo when you can buy a perfect Ideal Green Feed Silo?

BUY AN IDEAL GREEN FEED SILO NOW.

Write for latest circular B for full information.

ENSILAGE CUTTERS AND ALPHA GASOLINE ENGINES.

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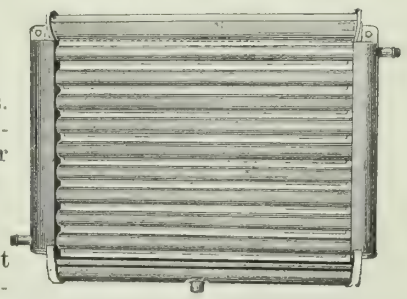

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CALIFORNIA HYDRAULIC ENGINEERING & SUPPLY CO.

68 Fremont St., San Francisco.

The Need of Better Sires.

[Written for the PACIFIC RURAL PRESS.

The demand for female livestock this year has seldom, if ever, been equaled with the result that many poorly bred animals have found their way into the hands of inexperienced breeders.

The prices paid for this stock have also oftentimes been far in excess of their actual worth, and for this reason cases are almost daily heard of, where the purchasers are becoming disappointed in their endeavors along this line.

We recently had occasion to visit one of these buyers, who had invested considerable money in a herd of grade dairy cows, with the intention of entering the business as a permanent thing; for he said he had become discouraged in trying to sell his hay, under such uncertain marketing conditions.

These cows had been purchased as a herd; and included among them were many individuals which were boarders at best, also a scrub bull. This bull was being used as the herd sire, although he had no qualifications for that position, except the fact that he would breed.

When asked why such a bull was being used, especially as he expected to continue in the business, the owner replied that he had expected to buy a pure-bred sire, but he did not feel that he could afford it at that time.

Here we found a man who would willingly pay $90 or $100 for a grade cow, that was able, at best, to produce only one calf a year besides a reasonable amount of butterfat, yet he could not afford to buy a good bull even though such bulls were being freely offered in his immediate vicinity for $100 upward.

In traveling over the State one finds that this same condition exists, to a large extent, among all classes of livestock men; and when instances are cited of failures in the livestock business, it is usually traceable to this disregard of the immediate need of better bred sires.

As a matter of fact there is no good reason why the price of the sire should not be more than that of the female animal, for in all instances where progress has been made in a large way it has been directly traceable to the quality of the sire.

We recently heard a breeder of Shorthorn cattle remark that he could sell every one of his females in a week's time if the people knew they were for sale, but that he might have a field full of promising young bulls without securing a buyer from his own neighborhood, even though he lives in the midst of a large range section.

As an example of what may be accomplished in a few years through the use of better sires, we might mention a dairyman in one of our large interior valleys, who has, during the past few years built up a herd of grade dairy cows, from an average production of 150 pounds yearly to over 400 pounds last year.

This man admits that while his culling and feeding have influenced the increase in production, it was after all on account of the sires which have been used that his present high average has been secured.

In starting this herd a few years ago, he pursued about the same tactics as those used by others, namely, he purchased here and there cows that looked to be good individuals.

From the first lot he selected through the use of the Babcock test, those cows which gave most promise of being good producers; and sold the others. As soon as he had secured in this way a sufficient number of cows for his needs, he began looking for a good sire.

In selecting such an animal he states that he first looked for butterfat records back of each bull, and then at the bull for individuality. Finally finding an animal that came up to his requirements in both respects, he began using him as the herd sire.

At that time cattle were considerably cheaper than at present, but he willingly paid the breeder $150 for the animal. It was two years before he was able to tell whether his selection had been good or bad, but with the freshening of those first heifers he says his mind was thoroughly made up to use nothing but purebred bulls in the future. That was the beginning of his big increase in production, which has been successfully carried on in the same manner since then.

This man has gained a reputation in his district as being an exceptionally shrewd dairyman, yet he says that what he has done can be easily accomplished by any other man who will simply study the fundamental principles of animal husbandry.

Cases of this kind might be cited without number, of how all kinds of livestock have increased their owners' yearly incomes, simply through the purchase of good sires instead of using grade ones from some nearby farmer's herd.

Until stockmen recognize more fully the necessity of using sires of known parentage, the slogan more and better bred sires should be the watchword of everyone interested in the future wefare of the livestock industry in this State.

IMPROVING SHIRE STUD.

[Written for the PACIFIC RURAL PRESS.]

Work is rapidly progressing at the Blackhawk stock ranch, near Easton, San Mateo county, in making the Shire horse stud there one of the largest and best in the West.

On a recent visit to this ranch we found that there are now eight aged brood mares, three aged stallions, two 2-year-old stallions, and several young fillies and horse colts now on the place. Five colts were foaled this year, four of which were horse colts, the one fillie being of exceptionally fine quality and one who should make a name for the ranch in the future.

In order to further build up this stud, the manager, Mr. Ward, is now in England, where he has purchased six stallions. Among them is a three-year-old by the name of Redlynch Forest King, which, he writes, he believes to be the finest Shire stallion ever shipped to this State.

In the shipment he also expects to bring out a few good brood mares and with the foundation that he already has, together with those now being imported, it is planned to build up the finest stud in the State, in the future.

Mr. Clark, superintendent of the ranch, informed us that they did not expect to attend the fairs this year, but that they expect to put up a strong showing at the next year's show in San Francisco.

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BREEDERS AND IMPORTERS OF SHORT-HORN CATTLE.

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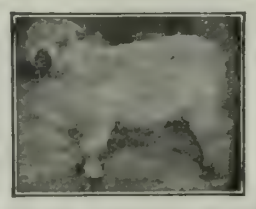
Offers for Season of 1914 an exceptionally fine lot of Purebred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.



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CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
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INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

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CATTLE POULTRY SWINE

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THE GRANGE CO., Modesto, Cal.

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Shire Stallions and Mares, both imported and home bred, of the best breeding, for sale. Inspection invited. For particulars apply

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DR. J. B. DALZIEL, 530 Fulton St., San Francisco, Cal.

With the Livestock Men.

In a communication to this office, W. J. Dakin, secretary of the Alameda County Fair Association, states that the Alameda County Fair will be held between September 23 and 27. He states that premium lists will be out this week. Announcement is also made that the premium lists for the Kings county fair at Hanford will soon be issued.

T. J. English, of Ontario, San Bernardino county, has just received a consignment of grade dairy cattle from the East numbering 100 head. Mr. English has a large alfalfa ranch near that place which he proposes turning into a modern dairy in the future. This is another instance where butter-fat will take the place of baled hay for marketing purposes.

D. B. Thompson, of Chowchilla, Madera county, has been appointed a committee of one, by the Chowchilla farm bureau, to secure several hundred head of young hogs to be distributed among the new colonists. It is thought that in this way the small farmer will be able to purchase his stock cheaper than where individual purchases are made.

One of the largest cattle deals ever made in the Southwest was consummated last week, when a syndicate of Chicago and Eastern men purchased the remaining 300,000 head of cattle from General Luis Terrazas, formerly of Mexico. The cattle are now in Mexican territory, but will be driven across the border as soon as possible. Those in shape for the market will be sold at once and the balance will be turned onto ranges in Texas. This marks the end of one of the largest cattle ranches in Mexico.

A dispatch from Tulare county states that R. F. Guerin has recently sold a bull calf from his herd to J. S. Benner of Big Pine, also a bull calf to Charles Yocum of Pixley.

Farmers in the vicinity of Arbuckle, Colusa county, are finding it difficult to secure a sufficient amount of stock to consume the immense amounts of feed there. It is stated that large amounts of grain on the lower lands were so badly infested with weeds that the harvesters could not handle it and the only means of realizing on these crops is through the aid of livestock.

An exchange from Chicago states that it is not believed that it will be possible for the present European wars to greatly advance the prices of meat in this country, as prices are already too high to allow the shipping of anything but canned meats, and we no longer have any meats for canning purposes. They state that we are not in a position to furnish any fresh meat at this time.

What is said to be one of the best equipped cheese factories in the State is the one now being operated at Woodbridge, near Lodi, San Joaquin county. C. A. Starkweather, State Dairy Inspector, found that the factory scored 98 points.

Dairy cows and hogs both brought good prices at an auction of grade stock held in Tulare county last week. Two of the cows sold for $110, and hogs were sky high, everybody wanting them. The scarcity of hogs is particularly noticeable this year, and it now appears impossible to supply the demand.

The new Madera Co-operative creamery has been completed and was open for business, July 29. Allan Bates, formerly of Modesto, has been selected as manager. There is every indication that the venture will prove a profitable one to both stockholders and dairymen in that section, as the dairy interests in Madera county have been growing rapidly during the last few years.

A subscriber reports that hog cholera is prevalent along the Sacramento river and states that he has vaccinated his herd. Similar reports are being received from other sections, and it is evident that active steps must be taken in checking the disease, or more severe losses will be encountered.

What is said to be the first carload of cattle ever to be shipped from this State to the East was a trainload that were shipped by Gage brothers, of Butte county, last week. It is claimed that better prices were received from the Eastern buyers than could be secured in the markets of this State.

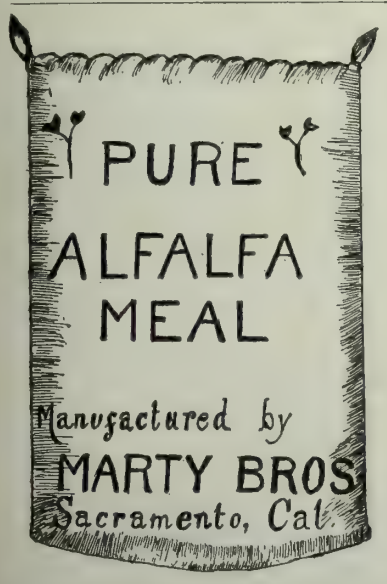
It is reported that 6000 bags of weevil-infested Manchurian corn are being held by the Department of Agriculture, which will be ground for stock food under the supervision of the Department.

Daniel Mullins, of Antler, Shasta county, has sold his herd of some 300 high-grade Hereford cattle to a company which has also purchased his lease of 1256 acres of range land. This is said to be one of the finest herds of Herefords in that section, although there are none of them registered animals.

The Fresno District Fair will be held September 29 to October 3. The directors are planning on making the fair this year better in all respects than ever before.

Buyers from Seattle, Washington, recently shipped 27 carloads of cattle from Chico to Northern points.

Cattle liquidation was heavier at the Portland Union Stock Yards last week, but outlet was so good that prices were advanced. Top steer sales the first part of the week were $7.50, cows $6.35 and bulls $5. Later sales of fine steers went at $8. Swine receipts were fairly large, prices varying from $8.95 early in the week to $9.05 on Friday. The market could easily handle several thousand more hogs at this time. The bulk of mutton and lamb arriving was of inferior quality, and while the receipts were in excess of 5,000 head, prices were about the same as those of last week. Prime wethers sold for $4.50 to $4.75, prime ewes $3.85 to $4, medium ewes $3.25 to $3.75, and spring lambs $5.50 to $6.



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Woodland, California

AUCTION

43—HEAD HOLSTEIN COWS AND HEIFERS—43

On the Cooley Almond Ranch, 1 Mile South of Durham, Butte county, California, and 7 Miles South of Chico. Buyers from a distance take S. P. or W. E. train to Durham.

MONDAY, AUGUST 17, AT 1 P. M.

The owners are closing out their choice herd of Holsteins owing to the fact that they want to devote their entire property to orchard, as the land is too valuable for dairying.

While these cows are not registered, they are mostly pure bred. All Calves and Heifers are sired by a Registered bull who will be on the ground to show for himself. Property to be sold as follows:

13 Holstein Cows, aged 3 to 7 years, and as fine as can be found in the State. The cows have been carefully selected and tested until they are an extra fine lot of producers. They all show their breeding. Some of these cows will produce when fresh 9 gallons of milk by weight. These cows are large boned, healthy, and in fine milking condition. Several are just fresh.

9 Holstein Heifers 30 months old, all carefully selected, will come in the last part of August.

20 Holstein Heifer calves, 4 to 14 months old. A choice lot; all selected with care.

Registered Holstein Bull, 7 years old. He is certainly a fine individual, fine markings and will weigh 2500 pounds and well pedigreed. This animal is good enough to head any herd of cattle either registered or grade. Anyone looking for an animal to improve their herd can make no mistake in this animal, as he has been tried out and found good, as his heifers show.

Purchasers in the market for high-class dairy stock without any frills should not fail to attend this sale.

1 Sharples Mechanical Milking Outfit. Complete and in the best of condition.

1 700-pound Hand or Power Separator, and all dairy equipment.

Prospective purchasers are invited to visit the ranch prior to sale and see these cows milked daily at 4 p.m.

Terms cash or approved note.

Everything goes. Nothing reserved. The highest bidder gets his choice.

Correspondence solicited. Photos furnished.

COOLEY BROS., OWNERS, Durham, Cal.
W. E. JINKINS, Auctioneer.

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Effective Hog-Dipping Practices.

[Written for the PACIFIC RURAL PRESS.]

Most all intelligent hog breeders now recognize that the presence of insects on the hog is apt to bring serious results, and yet there are comparatively few farms where one does not find the hogs infested with lice.

While these vermin are small by nature, they work serious harm to hogs in that they weaken the animal, and more especially is this true where the hog is the least bit out of condition.

Authorities claim that in most herds where cholera is prevalent, lice are also found in large numbers, and it is therefore advisable for every hog-grower to take steps toward their destruction.

There are many ways in which this may be accomplished, and one finds that the ingenuity of farmers in this State has brought out many good but inexpensive ways of handling the proposition.

Perhaps the most approved method is the dipping tank, and where hogs are kept in large numbers there is little doubt that money spent in such a tank is well invested.

These tanks are usually constructed of cement, and may be any size that the owner sees fit to build, the chief requisite being that they are wide enough for large sows, 30 inches usually being ample for the width when finished. The depth is also an important factor, as they must be deep enough to fully cover a large hog when filled with dip. A good length has been found to be 12 feet, although they may be longer with good results.

These tanks are made by digging a hole in the ground the required dimensions, and lining the hole with four-inch concrete walls and bottom. One end should be made with a gradual slope, to enable easy egress for the hogs.

Either coal-oil or crude oil and water may be used as a disinfectant in these tanks, care being taken that the solution is not too strong. Where coal oil is used, the proportions should be about one-half pint of oil to each gallon of water.

About eight or nine days after the first dipping, the hogs should again be dipped, as the first time only does away with the lice then on the animals and the gnits are not harmed. These hatch out in the course of a week or two, and unless dipping is again done they soon begin to breed.

Where one does not care to go to the expense of building a vat like the above, the ordinary dirt wallow may be used for disinfection purposes by pouring either crude oil or coal oil on the water. In this way the hogs get a covering of oil each time they enter the wallow, and, while not so desirable as the cement tank from a sanitary standpoint, such methods are very effective.

When either of the above methods are used, fresh water should be close at hand, to insure pure drinking water for the hogs, else they are liable to drink the oily water with serious results. Older raisers agree that while the hog has the name of being filthy, it will not drink dirty water if good fresh water is handy.

After the herd has once been ridded of lice, steps should be taken to see that they are kept that way; and in doing this, burlap and crude oil have been found good. The burlap may be wrapped around fence posts, rubbing posts, and on the doorways of the hog houses. When thoroughly soaked with crude oil, these rubbing posts are generously used by the hog, the oil being thoroughly rubbed into the hide by the hog himself. Another effective way of getting the oil onto the back of the hog is to suspend a burlap sack from the top of low gates connecting one pen with another. By keeping these sacks saturated with oil and by having them low enough to hit the hog each time he passes through the opening, his back receives a good coating of oil each time.

For young pigs, which can neither be dipped in the tank nor oiled in the above manner, a hand spray should be used.

The favorite place for the louse to live is back of the ears, along the neck and under the breast; and a close inspection of the hogs should be made every few weeks, to be sure that the remedies are proving effective.

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The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*. Every bottle sold is warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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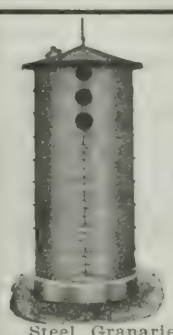

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13 gilts and 14 boar pigs from 3 to 10 months old.

HOPLAND STOCK FARM.

Hopland, California.

DEHORNING COW IN SUMMER.

To the Editor: Would it do any harm to a cow to dehorn her at this time of the year?—I. E., Lodi.

[We do not believe that it would do the cow any particular harm to dehorn her at this time, but dehorning is not generally done during the summer on account of the flies which are attracted and which greatly annoy the cow. The usual time for dehorning is in the spring, before the fly season starts.—EDITOR.]

It is expected that work of construction on the new creamery plant of the Churchill Creamery, Inc., at Fallon, Nevada, will be started within the next few weeks. The plans call for one of the finest plants in that State.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

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LUCERNE FARM JERSEYS—Silver Marquis and Noble Warder herd bulls, both sired by $17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

ROYAL JERSEY HERD—Offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers & Merchants' National Bank.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS—Registered exclusively, Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Short-Horns. Prices on application. Hopland, Cal.

REG. HOLSTEINS—Bull calves, Julana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

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BREEDERS OF REGISTERED HOLSTEIN CATTLE. McAlister & Son, Chino, Cal.

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COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

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FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Shorthorns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa.—Registered Berkshire hogs and Jersey cattle.

Misleading Poultry Talk.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

An article in the "American Poultry World" is written in answer to a man who claims to have made $5000 from 1800 hens. Of course, as in all controversies the usual pro's and con's are all made for the readers benefit, or to puzzle him.

But the sum and substance of it all is that the man who claimed to have made the $5000 from 1800 hens forgot to say that the feed bills and other expenses amounted to $2500.

You see that makes all the difference in the world, but it is a fact that these fairy stories about the get rich quick business in chickens, and all other livestock business, are as a matter of fact not more than half true. And it is also true that these fairy stories come from the East; guess it must be windy back there; though from all accounts of those who were blessed as to be born there, "back east" is the long sought "garden of Eden."

From the standpoint of an uninterested party, both these men make statements that are a long way from being correct. And all statements that are given publicity before being correct are misleading and false.

Mr. M. makes the $5000 dollar claim for poultry, he tells how he manages to care for the 1800 hens himself and if his plant is laid out right, water piped and mash feed bought ready mixed as he states, it does not require any great stretch of imagination to believe that he does all the work himself. I know quite a few men who take care of that many hens, but then they are Californians and have the California climate to work in. But this man makes the statement that "hens need but little succulent feed and but little land." He says, "my 1800 hens occupy less than an acre of land and less than half an acre furnishes green feed for them." He says in addition to the 1800 layers he has 750 chicks; on this same land, I presume.

Here is another statement, "On the day this was written I did not get out of bed till the clock struck 'five' and my chores were all done by 7 o'clock. My afternoon work did not begin until four. The only thing done 7 a.m. and 4 p.m. in connection with the poultry work was to drive to town with a case of eggs."

Now this is more "false and misleading" than the $5000 divided into halves. These are the kind of lies that induce people to embark in the poultry business and then leave all the work for the hens to do. People are always looking for jobs with the work eliminated, they read these wonderful stories of big money and nothing to do except just invest so much money and they have a sure thing. The man does not live who can do his duty by 1800 hens and 750 chickens five weeks old and do nothing to them or for them from seven in the morning until four in the afternoon.

The other party in the controversy whom we will call Mr. B. goes to extremes the other way; but for my part I always think it is better for the business, and better for those who go into it that they see the dark side even at its worst.

Mr. B. says, "I do not believe that any man, one man, can take care of a plant of that size not even if he worked 20 hours during the breeding season. Let us look for a moment at this breeding season work. For every 100 eggs put in the incubator a man is lucky is he hatches out 70 chicks. An average of 10 of these will die during the first two or three months. That leaves 60. Half of these will be roosters leaving 30 pullets. About five of these will be culls leaving 25 good pullets. That means to raise 800 layers as Mr. M. says he did, he would have to incubate 3200. If these were distributed over March, April and May, he would be getting chicks at the rate of 175 a week at our average, and at the end of 13 weeks there would be 2240 chicks to take care of. To properly care for all those chicks of different ages, requiring different treatment would require an immense amount of time to say nothing of caring for the 1800 layers. The thing is a joke in which ever way you look at it."

And I agree with him, provided it was all done as he implies. But if the eggs were all hatched at one time and the chicks under one roof, all being one age would not make near so much work. But the man who says he can do all these things and lie around from seven in the morning until four in the afternoon is certainly a wonder. We ought to import a few of his kind to take care of the fruit crop this summer, then farmers would not have to be worrying about what would become of their fruit if the 8-hour law passes. I would not mind paying a little to have him come here and give me lessons. But in another part of his letter I can read between the lines how he does it, or rather how he does not do it.

"My chicks are now five weeks old and the only cleaning the brooder has had yet has been to throw in a fresh bucket of barn sweepings, occasionally. They are still dry and sanitary, but will soon be replaced with shavings. Mangels saved over from last year's crop is given them for green feed."

That is one way of caring for chickens, and, of course such care as that does not require any time or labor to speak of, the only thing about it is, will it last? I don't pretend to know all of it, but I do know this that such careless work as his leaving chicks 5 weeks without cleaning out will not last. It will ruin him or any other poultry man who does it and I venture to predict that the reason that man is publishing these extravagant claims is to sell "a system." See there is more money in selling a system to suckers than there is raising chickens.

If he meant to publish a book of sound poultry policy he would not be advertising his easy methods of doing his work, neither would he call his gross income net profits. It pays to be wise to these men with exorbitant claims, because their system is no use to the man who wants to stay in the chicken business.

LIVER TROUBLE IN TURKEYS.

To the Editor: I have turkeys three months old dying from what I suppose is blackhead. It is some serious liver trouble. Have opened three and the livers were spotted and ringed, and one had yellow sacs on it. They ate fairly well up to their death but were pokey and dull looking. They have free range in alfalfa and run on barley hay, have plenty of water, grit, etc. Began feeding Hess Panacea as soon as I found they were sick and put a few drops of Watkins Stock Dip in the Water.—L. B. R.

ANSWER.—Not all liver diseases in turkeys are blackhead by any means; in fact we have very little of that disease here, so far as I can learn. Turkeys need plenty of fresh air, and if they are brooded as chickens are you can never be sure of what will happen.

If these poults have been crowded at any stage of their lives, that will account for it, most turkey ailments fly to the liver. The lady does not say whether the poults had any diarrheoa before they died, so it is a little hard to diagnose. For liver trouble or indigestion very often a few drops of Nux Vomica in the water will help. Or Calomel, ¼ ounce; Sodium Bi-carbonate, 1½ ounces; sugar, 1 ounce. Mix and rub together freely. For liver trouble use half a teaspoonful in one quart of mash food mixed with cold water and see that all have a share.

PALE COMBS.—I would like to ask the poultry editor what I can do for hens whose combs are colorless, while in the same yards all the rest are in excellent condition.—F. H. D.

This is a case for individual treatment. Separate the pale combed hens from the others and feed them a little better. It is very likely owing to the season. These hens have perhaps commenced to molt and the rest of the flock have not. This often happens, but not all hens lose so much color from the comb as to be noticed. The comb of a hen is a great indicator of health, and if we always acted on the hint we could have much healthier poultry than we do have. Give the pale combed hens the following tonic in the drinking water and be sure to keep all other water away from them.

Tincture of red cinchona, 1 fluid ounce; tincture of chloride of iron, 1 fluid drachm; tincture of nux vomica, 4 fluid drachm; glycerine and water equal parts to make 4 fluid ounces.

Give one teaspoonful in a quart of drinking water, allowing no other drink. I would also give the hens a little more animal food than usual and all the green feed you can get them to eat.

POISONING GOPHERS.

To the Editor: I once had 20 acres of alfalfa that was simply covered with gopher mounds. I killed every one and this is the way I got rid of them. I took one bushel of potatoes. picked long slim ones, and cut a slice the full length of the potato, about a third of the way through, and sprinkled them generously with powdered strychnine, then replaced the piece of potato and dug in the mound until I found the main runway. I then shoved the potato as far as I could into the runway and covered up good.

October and November are the best times to do the poisoning as the potato lasts so much longer and when one gopher eats a part of it there is plenty more left for the next fellow. One potato is good for every 60 feet square.

We also found carrots and parsnips good bait and the spring after we started there wasn't a gopher left on the place.

Florin, Sacramento county.

"This letter from your son in college is short."

"So's my son. That's why he wrote it."

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds, and other varieties. Capacity, 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

100 WHITE LEGHORN CHICKENS, 5 months old; about to lay; 75c each. 4 fawn and white Indian Runner laying ducks, from prize stock, and handsome drake, $8. Hatching eggs from same, 75c dozen. Mrs. Nutman, 295 Page St., San Jose.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 396, Los Gatos, Cal.

PETALUMA HATCHERY—Now booking orders for Fall. August, September and October chicks are highly profitable. Send for circular. L. W. Clark, Petaluma, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, $7.50 per 15; utility, $2 per 15; $10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

EGGS FOR HATCHING — Pure-bred White Rocks, $1 per setting; $6 per 100; until September 1. Mrs. J. B. Tupper, Ceres.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

HOPLAND STOCK FARM—Incubator chicks, S. C. White Leghorns and White Plymouth Rocks. Hopland, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BUFF AND WHITE ORPINGTONS. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

RID YOUR CHICKENS OF LICE and MITES BY USING

KILLAMITE

25c—50c—$1.00 Postpaid

WEST COAST SEED HOUSE

116-118 East Seventh Street, Los Angeles, Cal.

DON'T NEGLECT YOUR HENS

in the summer. Try our Complete System of Feeding as described in our free book, "Chickens from Shell to Market."

COULSON CO., Petaluma, Cal.

FREE BOOK

Raising Calves without milk. Everything you need for stock and poultry raising. Write today.

F. F. SMITH & CO., 1006 J St., Sacramento.

The Home Circle

Saving Rural Housewives.

[Written for the PACIFIC RURAL PRESS.]

We husbands ought to be grateful to the Extension Department of the College of Agriculture at Berkeley for fostering rural women's clubs throughout the State. Samples of the work they have been doing have recently appeared in the Home Circle columns of the RURAL PRESS.

These articles are a means of distributing the multitude of original ideas that housewives all over the State have "hid under a bushel" for lack of publicity.

If my wife can save ten steps an hour because of these articles, she will have that much more time and energy to spend on me—anyhow it will certainly make her constant amiable temper more easy to keep forever. One woman in Orangevale takes 250 steps an hour about her kitchen work, while another, elsewhere, takes 2000.

Fifteen rural clubs, mostly of women, have been organized under whatever name they chose, totaling over 600 members. The model constitution furnished by the Department states their aims: "To foster interest in agriculture; to encourage the practice of scientific housekeeping; to improve home conditions on the farm; to promote our social and economic betterment in country districts."

They accomplish these objects by meeting once a month or oftener and discussing, not neighborhood gossip, but particular home problems and how to solve them. A list of suggestive topics is furnished by the College. Topics taken at random from the list are: Uses of Water to the Body, How a Country Home May Have a Bath Room, What Kind of Towels, Should Children Sleep with Adults, Step Savers in the Kitchen, Value of Fruit in the Diet, Value of Fat Food to Children and Workers, Tissue Building Foods, Best Make of Milk Utensils, Milk and What It Contains, Co-operative Beef Killing, What to Wear in the Kitchen, Egg Substitutes, Disease Transmission by House Flies, etc. These or others are selected by club members, who elaborate their own ideas by reference to bulletins or books in the county libraries or elsewhere and write papers to read at the club meetings.

If, as is said, 50% of insane women are from the farms, driven to insanity by the "devils of life emptiness," here is a way of keeping them out of the asylums.

During the year six lectures are provided by the Extension Department. The subjects are chosen by the club. These lectures are free and open to the public.

Each club is expected to promote or assist in promoting a Farmers' Institute once a year, speakers for which the College will furnish free of charge.

Ten lesson sheets, containing five questions each in regard to the housework of each member, are to be answered in full and returned to Miss Lillian D. Clark, who is the enthusiastic promoter of these clubs and their official adviser.

The questions alone are enough to start a revolution in many farm homes; but when the smoke of the revolution has cleared away, the whole family will live healthier and happier than before.

Among these are: Do you make a practice of sitting at your work? Estimate the number of hours of work per day for a week. Have you any steps to climb between kitchen and living room and yard? How is waste water conveyed away from the house? Have you constructed a fireless cooker? How? Is it economical and convenient? Describe your method of laundering. Are there breeding places for house flies on your premises? Describe a sanitary method of dusting the house. What method of ventilation do you use for living rooms? Have you studied the motions you make when at work and how to reduce the number and thereby increase efficiency? What is the true meaning of cheap?

Methods of making pin money are brought to light. One woman made 500 glasses of "perfect" jelly by use

THE HALF-DOME OF PHILOSOPHY ON THE PALACE OF EDUCATION AT THE PANAMA-PACIFIC EXPOSITION.

California is a leader in consolidation of country schools and the use of such buildings as rural social centers. A full demonstration of American educational work will be arranged comparatively with that of other nations.

Eilers Bungalow Player Piano

THE MOST MODERN OF ALL PLAYER PIANOS

Sweet-toned! Durable! Satisfying!

Small enough for a tiny apartment

Large enough for a big hall

Appropriate for any mansion

The Latest! The Best!

Plays every note on the keyboard

Eilers MUSIC HOUSE

HOME OF THE CHICKERING PIANO

975 Market Street, San Francisco

Your "silent" piano taken in exchange

$485

buys an Eilers Bungalow

$2.50

per week pays for it

For further information regarding the Bungalow Player Piano, cut out coupon and mail to us.

Eilers Music House
San Francisco

Gentlemen: Please send me full information regarding the Bungalow Player Piano.

Name .....

Address .....

of "syrup hydrometer" and sold it in San Francisco. Another devised a home canning outfit in Nevada county and sells all she can put up, to the Hawaiian Islands.

"For downright, idiotic, superstitious, weak-minded, gullible credulity," growled Judkins, "recommend me to a woman! Gave away a pair of my trousers to an old peddler to charm warts off the children's hands! Madam, are you aware that this is the twentieth century, and not the Middle Ages?"

"It does seem a little silly," said Mrs. Judkins mildly, "but I've heard of such things being done. You know those trousers, John, were the pair you tore on the lawn mower the other day and threw aside."

"It's not the trousers, madam; it's the childish, imbecile, fatuous puerility of the thing. Besides, I left a hare's foot in one of those pockets, that I've been carrying for rheumatism the past three years."

Jim: "Honesty is the best policy, after all."

Bill: "How?"

"Remember that dog I stole?"

"Yes."

"Well, I tried two hull days to sell 'im, an' no one offered more'n a dollar; so I went, like a honest man, an' guv him to th' ole lady what owned 'im, and she guv me five dollars."

"Is this a first-class restaurant?" asked the haughty individual.

"Oh, yes," answered the waiter; "but we don't mind serving you."

"I once had a comfortable home, ma'am."

"Poor man! How did you lose it?"

"Me wife lost her job, ma'am!"

DRINK "QUALITY" TEA AND COFFEE

From IMPORTER to CONSUMER direct by PARCEL POST

"CHA-MA" - - - - 60 CENTS A LB.
A FAMOUS GREEN UNCOLORED JAPAN TEA

"NIN-GAR BLEND" - 50 CENTS A LB.
A DELICIOUS BLACK ENGLISH BREAKFAST TEA

"SEE-LOE BLEND" - 75 CENTS A LB.
OF THE CHOICEST BLACK TEAS IN THE WORLD
PACKED ONLY IN 1-LB. ABSOLUTELY AIR-TIGHT TINS

"E-CIL-A BLEND" 1 LB. 40 C; 3 LB. $1.00
A CHOICE BLEND OF PURE COFFEE
PACKED IN AIR-TIGHT PACKAGES
ALL POSTAGE PAID BY US. MAIL ORDERS TO

THE WM. J SCHROTH CO.
112-A MARKET STREET SAN FRANCISCO, CAL.

THE STEPHENSON PATENT COOLER.

NO ICE REQUIRED.

Perfect ventilation.

Absolutely sanitary

Awarded first prize wherever exhibited
If not for sale at your dealer's, write for particulars and prices.

L. ANDERSON CO., Mfrs.,
MARTINEZ, CAL.

Jones came downtown the other morning with a somewhat bruised and swollen forehead. His friend Briggs viewed the contusion with interest, and asked, "How did it happen, old man?" "Collided with the hat-rack last night," said Jones, shortly. "Accidentally?" asked Briggs. "No, Briggs," replied Jones, sweetly, ' 'I have every reason to suspect that it attacked me purposely."—Youth's Companion.

Doctor: "Well, Mr. Jones, how are you feeling this morning?"

Mr. Jones: "Very much better, thank you, doctor. The only thing that troubles me is my breathing."

Doctor: "Um—yes, we must see if we can't get something to stop that."

Sapleigh: "I shall never have the courage to propose to a girl—never!"

Miss Pert: "Well, you will be saved one disappointment in life, anyway, Mr. Sapleigh."

Our Young Folks

What Perkins Wants.

What can you make out of an apple? That's the question that Harry Perkins, general manager of the forthcoming California Apple Show is asking the housewives of the apple growing regions of California to answer. And Mr. Perkins doesn't expect the answer to be "Cider." He has an idea —a good, workable, promising idea, and if the housewives of California lend a hand they can greatly increase the importance of the apple industry in the State by increasing apple consumption.

Mr. Perkins wants the big Watsonville apple annual, which is to be held in San Francisco, October 1 to 11, to have an educational value which can be measured in terms of dollars and cents by the apple growers, and to this end he wants every wife in California, and every girl who hopes to be a wife, who knows how to make something good to eat out of California apples to send her recipe before September 1, to the offices of the Apple Show in the First National Bank building, San Francisco.

He wants recipes for pies made from green apples and dried apples; recipes for apple whip; for cobblers, jellies, jams, preserves, salads—anything and everything that is made of apples and is good to eat. As everybody knows, apple pies are not all alike, and if the California Apple Show can put into the hands of the wives of California a recipe for the very best apple pie that can be made, the result is going to be an increase in the demand for apples. That's the Perkins idea.

President O. D. Stoesser of the Watsonville Apple Annual Association is going to appoint a committee to award prizes to the authors of the best recipes. An effort will be made to persuade some of the famous chefs of San Francisco to serve on this committee and to experiment with the recipes in their perfectly equipped kitchens. The prize winning recipes will be published in the handsome apple show program, which is to be made in the shape of a huge bellflower apple and printed in the natural colors.

Wanted—A Motto.

It is an extraordinary and significant fact that men who have risen to fame and fortune, especially those whose beginnings have been small, have always had a motto, a maxim, a proverb, as a spur or a guide to success.

When one of these great men "sits" for an interesting interview, and pulls back the curtain on his methods, invariably there comes the confession: "My motto was——" And then he quotes the half-dozen words which seem to have been a life's inspiration to him. Noble families have felt the mesmeric influence of the family motto, and preserved their "nobility" in the best sense. School-boys have imbibed, for their good, the teaching wrapped up in their school's motto.

Fathers sending their sons out into the world have, not only on the stage, but in real life, said: "Good-bye, my boy! Remember that ——" And then comes the maxim they are to make their own. Certain it is there's something in it. So to "get on" we must get a motto. "Opportunity passes but once." "The open eye sees the open chance." "Custom follows courtesy." "Give the best, and you'll get it." "My policy—honesty." "Do it NOW."

Pick a good one, and live up to it.

"Now, Thomas," said the teacher severely, "how many times must I tell you not to snap your fingers? Put your hand down and presently I'll hear from you." Five minutes later she said: "Now, then, Thomas, what was it you wanted to say?" "There was a man in the entry a while ago," said Thomas serenely, "and he went out with your new silk umbrella."—Toronto Sun.

"Oh, mamma, will you tell me a fairy tale, please?"

"Wait until your father comes home, dear; he'll tell us both one."

John McDermott & Sons

Wholesale Linen Dealers,

111-13-15 Winston Street,
Los Angeles, Cal.

have established a mail order department, and will sell by mail at WHOLESALE PRICES.

THIS SPECIAL PACKAGE

$30 Value Sent on Receipt of $20

LOOK AT THIS LIST

	Usual Value.
1 Pair Blankets	$6.00
1 Comfort	3.00
1 Bed Spread	2.50
1 Doz. Towels	1.80
½ Doz. Bath Towels	1.50
2 Yds. Table Cloth	3.00
1 Doz. Napkins	3.00
1 Doz. Twill Dish Towels	1.00
1 Rag Rug, 27x54	1.50
2 18x54 Dresser Scraf	1.00
6 Sheets	4.50
6 Pillow Cases	1.20
TOTAL RETAIL VALUE	$30.00

We pay all freight or express charges. We guarantee every article to be as represented and usually sold at above prices. You SAVE one-third. If you don't want whole list, select what you wish, and deduct 25%. Express charges paid on all orders of $5 or over. If you are not satisfied this is the best bargain you ever bought, return the goods and your money will be refunded. Reference: German American Trust & Savings Bank, R. G. Dun & Co., Bradstreet's.

A-C-C COFFEE

A PURE COFFEE OF RICH FLAVOR AND STRENGTH

3 lbs. in air-tight tin for $1.00

delivered postpaid to any address within 150 miles of San Francisco, or $1.10 delivered within 600 miles.

The Anglo-Ceylon Co.

244 California Street San Francisco

MISS HEAD'S SCHOOL

2538 Channing Way, Berkeley

Boarding and day school for girls. Catalogue sent on request. 27th year begins Aug. 18, 1914.

MISS MARY E. WILSON, Principal.

Meals on Time

A good oil stove gives full heat just as soon as it's lighted. There's no waiting for the fire to catch up or the oven to heat. Meals can be started later and still be served right on time. That means less work and less time in the kitchen.

New Perfection OIL COOK STOVE

burns kerosene, the clean, cheap fuel and gives an intense heat that can be regulated just as you want it. It does all sorts of cooking and baking just as well as a wood or coal stove—and without tainting the food. Don't cook in a hot kitchen this summer. Don't lug coal and wood and ashes. Get a New Perfection. It saves all this trouble and it's economical, too. Ask your dealer for the New Perfection.

Standard Oil Company
(California)

FOR BEST RESULTS USE PEARL OIL

THE MARKETS.

San Francisco, Aug. 5, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The market is in rather chaotic condition, with the export trade in the North temporarily suspended, and quotations are rather uncertain. There is a fair business in jobbing lines locally; however, Club is quoted lower, the figures being for new crop grain.

California Club, ctl....	$1.55	@1.57½
Forty-fold	1.57½	@1.60
Northern Club	1.55	@1.57½
Northern Bluestem ...	1.60	@1.62½
Northern Red	1.52½	@1.60

BARLEY.

The export movement is completely tied up for the present, and there are large accumulations at Port Costa and in valley warehouses. Shipping grain is accordingly nominal, as there is no way to get a definite line on actual values. There is little doubt, however, that shipping will soon be resumed, and there is nothing to indicate that any grain should be sacrificed. Feed is slightly lower, with liberal offerings and about the usual local demand.

Brewing and Shipping.	Nominal	
Choice Feed, per ctl...	$0.95	@0.97½
Common Feed	Nominal	

OATS.

Values are unchanged and fairly firm, though more liberal offerings of the feed grades are expected. The demand for seed is not yet very large.

Red Feed	$1.00	@1.10
Seed	1.17½	@1.25
Gray	Nominal	
White	1.22½	@1.27½
Black Seed	Nominal	

CORN.

Eastern corn is quite firm, with little offered here. A lot of Manchurian has come in, and is offered at lower prices, but is said to be weevilly and defective.

California Yellow	Nominal	
Eastern Yellow	$1.82½	@1.85
Eastern White	Nominal	
Egyptian	1.80	@1.85
Milo Maize	1.80	@1.85

RYE.

There is no trading of any consequence, values remaining nominally at the former level.

Rye, per ctl.	$1.50	@1.60

BEANS.

Several changes are noted, both upward and downward. Mexican bayos are offered more freely, and have dropped sharply, while blackeyes and white beans have eased off from the high figures quoted last week. On the whole, however, the market is very firm, with considerable inquiry from the East, limited supplies here, and no anxiety to sell among local holders. Limas and pink beans have again been marked up.

(On wharf.)

Bayos: Cal., per ctl....	$7.00	@7.50
Mexican	3.00	@3.50
Blackeyes	6.00	@7.00
Cranberry Beans	4.25	@6.00
Horse Beans	1.90	@2.15
Small Whites	4.75	@5.00
Large Whites	3.75	@3.90
Limas	7.00	@7.25
Pea	4.25	@4.50
Pink	4.20	@4.30
Red Kidneys	Nominal	
Mexican Red	6.50	@6.75

SEEDS.

There is practically no movement in this line at present, though a little more business is expected before long in preparation for the fall trade.

Alfalfa	12½	@15 c
Brown Mustard, per lb....		3¾c
Canary	7	@ 7½c
Hemp	2½	@ 3 c
Millet	2½	@ 2¾c
Timothy	7½	@ 8 c
Yellow Mustard	Nominal	

FLOUR.

Eastern brands have been marked up 20c, owing, it is said, to the war excitement, and local brands are expected to advance shortly. The upward tendency is bringing out a more active demand locally.

Cal. Family Extras....	$5.80	@6.20
Bakers' Extras	4.80	@5.40
Superfine	3.90	@4.20

Hay and Feedstuffs.

HAY.

Arrivals for the past week show a further increase, and have been moved off with great difficulty. A considerable part of the receipts is coming in on consignment, which tends greatly to weaken the market, especially as the greater part of it is of poor to ordinary quality. Moreover, consumers as yet show no disposition to buy for their winter needs. Dealers are buying very little in the country, though many growers appear anxious to sell. Hay of choice and fancy quality, however, is still scarce and finds a ready market. Little alfalfa is appearing here now, the demand being very light.

No. 1 Wheat, or Wheat and Oats	$ 9.50	@10.00
do No. 2	7.00	@ 9.00
Barley	6.00	@ 8.00
Tame Oats	7.00	@11.00
Wild Oats	6.00	@ 8.00
Alfalfa	6.00	@ 9.50
Stock Hay	4.50	@ 5.00
Straw, per bale.....	40	@ 55c

FEEDSTUFFS.

Oilcake meal is again quoted. Otherwise values show no change, business in practically all lines being quiet.

Alfalfa meal, per ton....	$16.00	@17.00
Bran, per ton.....	25.50	@26.50
Oilcake Meal	33.00	@35.00
Cocoanut Cake or Meal..	26.00	@27.00
Cracked Corn	41.00	@42.00
Middlings	32.00	@33.00
Rolled Barley	21.50	@22.00
Rolled Oats	28.00	@29.00
Shorts	27.00	@28.00

Garden Truck.

VEGETABLES.

The local demand for garden truck is running rather below expectations, and with most varieties coming in quite freely, prices in general are low, some descriptions having declined in the last week. Tomatoes are quoted a little higher than last week, but supplies are still very heavy, and the usual midsummer prices prevail. Green peppers have dropped again, with excessive offerings, and both cucumbers and eggplant show a sharp decline, the former selling as low as 15c per lug box. Cream squash is a little higher, okra and summer squash being fairly steady. The top price of green corn has been marked down, with liberal offerings of fairly attractive stock. String beans have dropped and no limas are offered at the moment. San Mateo peas are considerably higher.

Cauliflower, dozen	40	@ 70c
Green Peppers, lugs.....	30	@ 40c
Carrots, per sack.....	35	@ 50c
Green Peas, lb.....	3	@ 4c
Tomatoes: Delta, lugs...	25	@ 50c
Beans: Wax	1½	@ 2½c
String	1½	@ 2½c
Cucumbers, lugs	15	@ 30c
Eggplant, lugs	35	@ 60c
Green Corn, sack	75c	@ 1.50
Summer Squash, box....	25	@ 35c
Cream Squash, box.....	40	@ 60c
Okra, box		50c

POTATOES AND ONIONS.

Supplies of both potatoes and onions are accumulating in the Delta district, the shipping demand having dropped off, and prices are weakening. Ordinary potatoes show a slight decline and onions have been marked down sharply. New potatoes, sweets and garlic stand as before.

Potatoes:		
River Burbanks	80c	@$1.10
New Potatoes, lb.....	1	@ 1½c
Sweet Potatoes, lb.....	5	@ 6c
Onions: New Yellow, sack	80	@ 90c
Garlic, new, per lb.....	5	@ 8c

Dairy Produce.

POULTRY.

Prices stand as before. The demand has been a little better for the last few days, bus continued large arrivals from local and Eastern points have prevented any improvement in values, the supply being slightly in excess of requirements.

Large Broilers	18	@19 c
Small Broilers, per lb...	18	@19 c
Fryers, per lb.....	19	@20 c
Hens, extra, per lb.....	16	@17 c
Hens, large, per lb.....		16 c
Small Hens, per lb.....	15	@16 c
Young Roosters, per lb..	20	@21 c
Squabs, per doz.	1.50	@ 2.00
Geese, per pair	2.00	@ 3.00
Ducks, doz.	4.50	@ 8.00

BUTTER.

The local market shows a little improvement this week, extras being up 1½c. Arrivals continue large, but much of the stock is required to fill special contracts, leaving the current supply rather light. The drop at Los Angeles is attributed partly to increased production in the south, but also to the fact that the grading is reduced from 93 points to 90, the former standard being held in the San Francisco market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	24	24½	25	25	25½	25½
Prime Firsts ..	23	23	23	23	23	23
Firsts	22	22	22	22	22	22

EGGS.

The upward movement of eggs has been resumed, with a 2c advance in extras for the week. Supplies are still coming in fairly well from the principal producing points, but local offerings have been readily absorbed.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	28½	28½	30	30	30	30½
Firsts	25½	25½	25½	25½	25½	25½
Selected Pullets...	24½	24½	25	25	25	27

CHEESE.

There has been some slight fluctuation during the week, but at present the only change from the former figures is a fractional advance in Y. A.'s.

Fancy California Flats, per lb...	14	c
New Young Americas, fancy.....	15½	c
Monterey Cheese	13@14	c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter: Extras..	25	25	25	25	24	22½
Eggs	30	29	28½	28½	28½	29
Cal. Cheese: Flats ...	13	13	13	13	13	13

Deciduous Fruit.

The local movement of apricots is about over, and there is not enough of this fruit left to quote. Peaches are still coming in freely, and small packages are lower, though lugs have been marked up a little. Plums, prunes and nectarines are steady as last quoted, all of these lines finding a very fair demand; while pears are lower on increased offerings. Figs are much lower, with large supplies from Solano county. Strawberries stand as before, and huckleberries are lower, with large supplies of rather poor stock. Blackberries are a little higher and raspberries show another sharp advance, with limited arrivals. Apples are moving freely, with little change in prices. Grapes are now quite a feature in the market, several varieties being offered, and prices for most lines are declining, though all offerings meet with a good demand. All melons are lower, with heavy supplies.

Huckleberries, lb.	8	@ 11c
Blackberries, chest	$ 1.50	@ 2.00
Raspberries, chest	10.00	@12.00
Strawberries, chest	1.75	@ 3.50
Apples, New Crop:		
Astrakhans, box	50	@ 1.00
Alexanders	50	@ 1.00
Gravenstein	50c	@ 1.15
Crabapples	50c	@ 1.00
Nectarines, crate	50c	@ 1.00
Pears, box, large.....	1.00	@ 1.25
Peaches, crate	25	@ 35c
do lugs	50	@ 75c
Plums, crate	25	@ 40c
do lugs	30	@ 75c
Prunes, lugs	75c	@ 1.25
Figs: Black, single layer.		40c
White		50c
Cantaloupes, crate	50	@ 75c
Watermelons, doz.....	75c	@ 1.50
Casabas, lugs	50	@ 75c
Grapes: Malagas, crate..	60	@ 75c
Seedless, crate	75	@ 80c
Muscat, crate	75c	@ 1.00
Fontainbleau, crate ...	50	@ 75c

Dried Fruits.

The dried fruit situation is decidedly uncertain, with most conflicting reports of the effects of the European war. Authorities on the growers' side hold that the demand will be increased, especially in prunes, owing to the probable devastation of European prune districts; and that the prune shortage will bring more attention to peaches. Other parties are spreading a rumor that the difficulty of reaching European markets will cause trouble, and that some packers are asking delay in delivery of contracted fruit. The former view would seem at least to be reasonable, and as it is hardly possible that the present tie-up of shipping should continue long, it would appear unwise to force fruit on the market at any sacrifice of prices. For the present, local packers report no change in quotations, though the trade is quiet, and the future naturally somewhat uncertain. Some effort has been made to reduce the price of peaches, but apparently without much success. There has lately been quite a large movement of raisins, with indications that the 1913 crop will soon be cleaned up. The New York Journal of Commerce says: On the part of buyers a consideration of no little weight is involved in the possibility that, though Europe may need supplies from this side, she will be debarred from geting not only these but purchases already made for forward shipment by the dislocation of ocean transportation facilities. Whatever efforts are being made by packers to stimulate buying interest in Eastern distributing quarters find little response. The several big packers who are long of the market still hold prunes for a 5¾ to 6c. f.o.b. four-size bulk basis and are making no effort to secure business. In 1913 prunes there is as much of apathy felt by buyers as in the new crop fruit, but holders on the coast are not eager sellers apparently of the more popular sizes at least. The local trade is showing little interest in forward shipment apricots and peaches and the demand for spot goods is light. A steady feeling prevails on spot stocks, but the market for futures in both varieties seems to be in buyers' favor. Raisins are unchanged. Spot seedless are in small compass and firm under a steady jobbing demand, but the market for futures is dull.

Evap. Apples, 1914	5	@ 6 c
Apricots, 1914	8½	@ 9 c
Figs: White, 1914.....		3c
Black	2	@ 2½c
Calimyrna, 1914		4½c
Prunes, 4-size basis, 1914..	5¾	@ 6½c
Peaches, new	3½	@ 4 c
Pears	8	@ 9 c
Raisins (in sweatbox):		
Loose Muscatels	3¾	@ 4 c
Thompson Seedless		4½c
Seedless Sultanas		4 c

Citrus Fruits

Lemon prices have been marked up a little at shipping points, but the San Francisco quotations have not yet been changed, as dealers here are pretty well supplied. The demand in this market, however, is keeping up in good shape. Oranges are moving in about the usual quiet way for this season, values standing as before.

Although the Eastern markets are well supplied with local decidous fruits, Valencias are in good demand and the market is strong. The demand for 216s or larger has been extra good, but has eased off somewhat on 250s or smaller. Dispatches from Florida state that present indications are for the largest crop of oranges ever harvested in that State the coming season. Present estimates are that there are still about 4500 carloads of Valencias still to be shipped from California points.

The lemon situation is about the same as that of a week ago, the western markets being about the only points where any are being sold. At present, shipments are small from California. There has been some improvement in the Eastern markets the past week, advances being noted in imported lemons. Prices of best Cali-

fornia lemons varied between $5 and $5.50.

The New York auction was slightly easier on oranges August 4, nineteen cars of Valencias selling for an average of $2.45 to $3.80. The Philadelphia market averaged on this date $2.40 to $3.10 on Valencias, while the Boston market averaged between $2.70 and $3.65. Pittsburg reports a $4.50 quotation on lemons.

Oranges: Valencias, box	$ 1.50@ 2.50
Med. Sweets, box	1.00@ 1.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.00@ 2.50
Lemons, box	2.75@ 5.50
Limes, case	4.00@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

New prices are quoted on 1914 almonds, being ¼ to ½c higher than those made earlier in the season. It is expected that the crop will soon be disposed of. Walnuts remain nominal. It is reported from New York that all offerings of European nuts have been withdrawn.

Almonds, 1914 crop:	
Nonpareils	17¼c
I X L	16¼c
Ne Plus Ultra	15½c
Drakes	13¼c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

This market remains very quiet, with ample supplies and liberal offerings from the country, and there is little firmness as to prices. It is reported that a good deal of stock will be held in the country in hope of better values.

Comb: White	13 @14 c
Amber	10 @11 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

There is not much movement locally, but some Eastern buyers are in the market, and new offerings are gradually moving off at about the former prices.

Light	31 @32½c
Dark	27½@30 c

HOPS.

Picking in some districts will be a little late this year, but will be well under way within the next fortnight. Trading is rather slow, pending harvest operations, but some transactions have gone through at rather easier prices than have formerly prevailed. The Oregon crop prospect is said to be below expectations, owing to hot weather.

1913 crop	12 @14 c
1914 crop	13 @14 c

Live Stock.

The only quotable change is a slight advance in dressed beef. The local market for cattle is inclined to easiness, but considerable stock is moving to other markets. Nevada sheep and lambs are beginning to arrive, and lower prices are expected. Offerings of hogs have been very light.

Steers: No. 1	6½@ 6¾c
No. 2	6¼@ 6½c
Cows and Heifers: No. 1	5¾@ 6 c
No. 2	5¼@ 5½c
Bulls and Stags	2½@ 4½c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¾@ 9 c
100 to 150 lbs	8½@ 8¾c
Prime Wethers	5 @ 5½c
Ewes	4 @ 4½c
Milk Lambs	6½@ 7½c

DRESSED MEATS.

Steers	11 @11½c
Heifers	10½@11 c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	11½@12½c
Ewes	11 @11½c
Suckling Lambs	14½@15 c
Dressed Hogs	15 c

WOOL.

The southern clip is now beginning to move, and shearing has started at some Sacramento valley points. Values are well maintained, but the Eastern market is slightly unsettled, owing to uncertainty as to the effects of the war on the foreign situation.

Fall clip:	
San Joaquin	7@ 9c

HIDES.

There is a very fair demand locally for country hides, and with very limited offerings, everything available is readily absorbed at the former prices.

Heavy Steers, over 56 lbs.	15 @15½c
Medium	15 @15½c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb.	15 @15½c
Light Cows, 30 to 50 lb.	14½@15 c
Kip	15½@16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	25½@26½c
Dry Kip, 10 to 15	24½@25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

Little has been done in the local market for some weeks past and there is evidently no strong demand here. A small lot of light to medium stock appeared recently from northern California, but no great interest was shown by buyers, and most shippers are still holding off. There is a fair country demand, however, for good, heavy work stock.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

SPECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., Aug, 3, 1914.

More cars of deciduous fruit were handled in the Eastern markets this week than any time during the season. We believe that the Elberta peach deal turned out more satisfactorily than for several seasons past. Despite the fact that the receipts of local peaches in various Eastern markets was fairly heavy, the demand for Californias continued active and a very large percentage was sold at private sale.

The Bartlett pear market remained unchanged from the week previous, and, if anything, showed a slight rise. There are a very few Bartletts left to be shipped from the State, and, as the quality appears to be above the average, the markets have taken an advance of at least 50c a box over present quotations.

Plums are rapidly cleaning up, nothing being left but Gross, Giant, Hungarian and Grand Duke. These will all be out of the market by the latter part of this week.

Thompson Seedless grapes have been moving faily well; but, owing to the censorship established in the Fresno district with regard to the percentage of sugar that must be found in Malaga grapes before ready for shipment, this variety has moved only in light supply. Favorable weather conditions, however, should bring about a heavy shipment this week of at least 150 cars.

Tokays in most districts are coloring up, and, despite the mildew and sunburn in the upper San Joaquin district, we anticipate a heavy shipment.

The markets for the past week ranged as follows:

New York—Wickson, 97c to $2; Bartletts, $1.85 to $2.30; Burbanks, $1.10 to $1.25; G. Duke, $1.30 to $1.75; half boxes Comet, 70c; Kelsey, 80c to $2; Abundance, $1.15 to $1.45; Sugar, $1.10; Maynard, $1 to $1.20; German, $1.25; Crawford, 56 to 80c; Tuscans, 65c to $1.25; Diamond, $1.25 to $2; Thompson Seedless, $1.40 to $1.55; Malagas, $1.20 to $2.35; Bradshaw, 95c to $1.20.

Chicago—Wickson, $1.12; Bartletts, $1.90 to $2.10; Burbanks, $1.32; G. Duke, $1.45 to $1.90; Kelsey, $1 to $1.55; Maynard, $1.25 to $1.80; Elbertas, 55 to 80c; Crawford, 50 to 60c; Tuscans, 42c; Diamonds, $1.60 to $1.90; Thompson Seedless, $1 to $1.20; Malagas, 85c to $1.94; Bradshaw, $1.20 to $1.30.

Minneapolis—Wickson, 85c to $1.45; Bartletts, $2.25 to $2.65; G. Duke, $1.35 to $1.85; Kelsey, 70c to $1.15; Elberta, 60 to 85c; Maynard, $1.45 to $1.90; Elbertas, 45 to $1.30; Crawford, 25 to 75c; Tuscans, 55 to 60c; Diamonds, $1.30 to $1.70; Thompson Seedless, $1.35 to $1.95; Malagas, $1.70 to $1.75; Bradshaw, $1 to $1.70.

Boston.—Wickson, 90c to $1.85; Bartletts, $1.40 to $2.55; Burbanks, 80c to $1.15; Dukes, $1.75 to $2.10; Kelsey, 80c to $1.90; Abundance, 75c to $1; Eureka, 87½c to $1.75; Sugar, $1.15 to $1.45; Giant, $1.35 to $1.60; Gross, $1.40 to $2; Satsuma, $1.05 to $1.70; Crawford, 40 to 95c; Tuscans, 75 to 80c; Diamonds, $1.40 to $2; Thompson Seedless, $1.05 to $1.75; Malagas, $1.25 to $1.85; Bradshaw, $1.05 to $1.40.

Philadelphia.—Wickson, 80c to $1.70; Bartletts, $1.70 to $2.65; Gross, $1.75 to $2.25; Giants, $1.65 to $1.70; Tuscans, 90c; Diamonds, $1.45 to $1.85; Thompson Seedless, $1.55 to $1.65; Malagas, $1.15 to $2.20; Bradshaw, 65c to $1.90.

Total shipments of deciduous fruits from Sacramenta up till August 4 were 5727¼ cars, as against 5066 cars at the same date last year.

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To the Editor: Answering your article in the issue of July 4th, "Selling Duck Eggs," would say that we have thoroughly tried out the Indian Runner duck and agree with your correspondent R. F. F., that they are great layers if in small flocks or if in large flocks with large free range; but they eat a great deal more than Leghorn hens, Indian Runner men's statements to the contrary notwithstanding.

Again, while at first, and perhaps for a considerable time, you will claim (and make yourself believe it) that the flavor is just as good as hen eggs, yet on a long time proposition you will be glad to get back to the hen egg for steady diet. I cannot tell why, unless they are richer, but it is a fact just the same.

I have raised them in small flocks and have had as high as 1300 layers on hand at a time both fawn and white, and pure white, pure-bred stock. I have tried very hard to make myself believe they were just as fine an egg and even better than hen eggs, but it did not do, and I was mighty glad to have the hen's eggs back on the table again.

In marketing them, I had no trouble as long as the price did not get above 40 cents a dozen, but above that price it was simply impossible. The house that I sold to said that they could not sell them for more, as the class of trade that bought them could not afford to buy them at the higher figure. They bought the duck eggs, when under 40 cents, because they got more for their money in a dozen of them than they got in a dozen hen eggs, but when the price got too high, they simply dropped out.

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Whether this is true I do not know, but I do know that at the time, hen eggs went to 56 cents, although my house did not raise the price a cent on duck eggs and did not write a single letter of inquiry; although he knew I had lots of eggs and must be shipping to other people. Well, I was with no better results and I think I know as many good wholesale houses as anyone.

My experience taught me that I was foolish to be monkeying round with something that, when in its season of greatest scarcity nobody wanted at anything like a decent price.

I have raised tens of thousands of ducks since; but no more Indian Runners, as utility birds, for me.

Petaluma, Cal. F. E. WARREN.

The farm adviser of San Joaquin county, F. F. Lyons, has opened a bureau where all farmers in his county may list whatever they want to buy or sell.

PUBLISHER'S DEPARTMENT.

During the past week the number of new subscribers to the PACIFIC RURAL PRESS exceeded the 200 mark —the exact number being 226. Since March 1st of this year the total number of new names added to the subscription list is 4951, or an average of 215 each week of that time. As our work of adding new subscribers will be continued, we believe our advertising columns offer a better opportunity for merchants wishing to do business with agricultural California than any other medium.

"Your paper is O. K. and is a great help to me. I enjoy particularly the editorials and commend your stand on the 8-hour law, etc. Long may you prosper." Such was the opinion expressed by Dr. O. P. Fitch of Placerville in a letter taking advantage of our special offer on Prof. Wickson's new book, 'One Thousand Questions in California Agriculture Answered." This week there has been a heavy increase in the number of orders received for this useful book, which, with orders for the other works we publish, is keeping the office force busy getting them out, but we hope to have every order now on hand handled so the books will reach our subscribers about the same time this issue of the PRESS gets into their hands.

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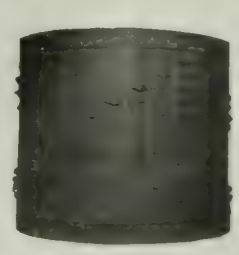
This is a Photo of the 12x36 Redwood Stave Silo manufactured and erected by us on University of California Experimental Farm, Davis.



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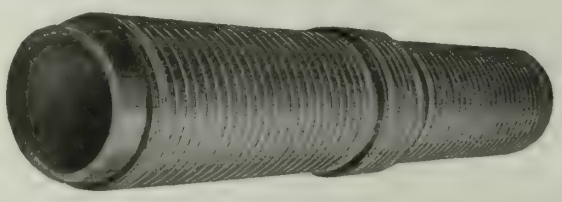

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Vol. LXXXVIII. No. 7. SAN FRANCISCO, SATURDAY, AUGUST 15, 1914. Forty-Fourth Year.

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SILOING THE CORN CROP.

[Written for the PACIFIC RURAL PRESS.]

Although the silo-filling season in California may be said to date from the first cutting of alfalfa in the spring till late in the fall or early winter, the greater portion of silos are filled during August, September, and October, for it is at this time that corn begins to ripen, and that is as yet the principal silage crop grown.

With the comparative newness of the silo in the State, it is natural that much experimenting has been made necessary by farmers during the past year, as to what stage the corn should be cut and how best to accomplish the work economically.

There has been a tendency on the part of some growers to cut their corn too green, in the belief that the extra moisture contained in such corn was necessary for the proper preservation of the silage. Results have shown that this was an erroneous idea, because corn cut while green and before the grain has had a chance to harden somewhat, carries more water and therefore less nutrients than corn that has had a chance to become almost matured.

Experience shows that the most satisfactory stage is when the dent has formed in the grain, even though the stalks and blades dry up a little, for the necessary moisture can be easily supplied by turning a hose into the cutter or having it run directly into the silo, although the former way is usually more convenient.

There is less danger of getting too much water into the silo than too little, for water's only effect when added in this way is to make the water content more than when siloed without. As an evidence that water will not do any harm, we find many silos that have no roof, which allows all of the winter rain to pour in without any damaging effects, to the silage.

State Library 7-1-16

Next [illegible] e crop to corn is sorghum, which can be [illegible] grown in many locations where corn does not seem to do so well. As there is considerable more water and sugar in sorghum than in the corn plant the silage made from sorghum is sometimes sour. This may be overcome by filling the silo with both corn and sorghum, an especially good way being to use corn that has become a little dry, as in that way the excessive moisture in the sorghum is partially overcome.

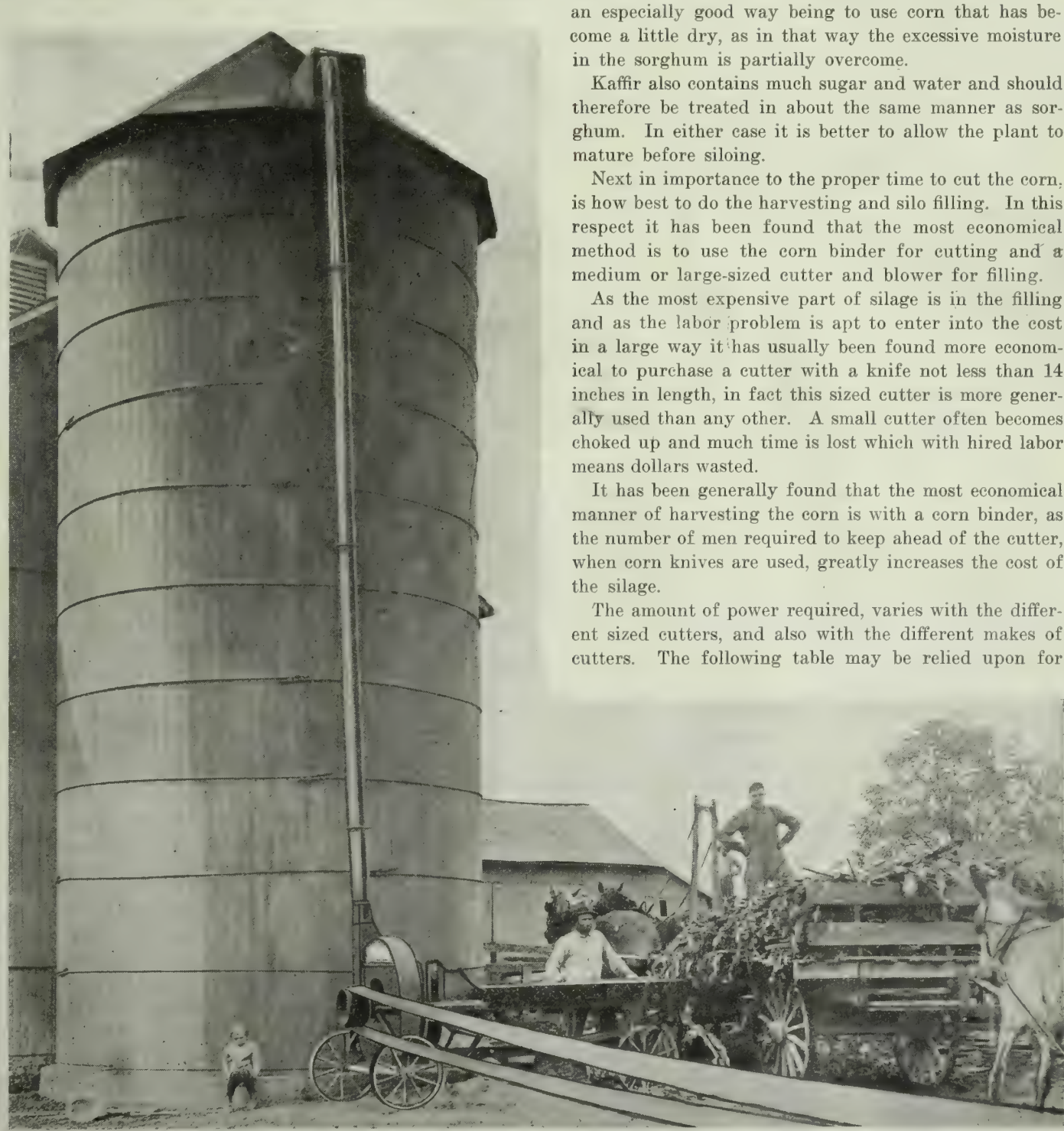
Kaffir also contains much sugar and water and should therefore be treated in about the same manner as sorghum. In either case it is better to allow the plant to mature before siloing.

Next in importance to the proper time to cut the corn, is how best to do the harvesting and silo filling. In this respect it has been found that the most economical method is to use the corn binder for cutting and a medium or large-sized cutter and blower for filling.

As the most expensive part of silage is in the filling and as the labor problem is apt to enter into the cost in a large way it has usually been found more economical to purchase a cutter with a knife not less than 14 inches in length, in fact this sized cutter is more generally used than any other. A small cutter often becomes choked up and much time is lost which with hired labor means dollars wasted.

It has been generally found that the most economical manner of harvesting the corn is with a corn binder, as the number of men required to keep ahead of the cutter, when corn knives are used, greatly increases the cost of the silage.

The amount of power required, varies with the different sized cutters, and also with the different makes of cutters. The following table may be relied upon for the average cutter, where a blower is used and also shows the capacity per hour:



Filling the Silo—The Papec Pneumatic Ensilage Cutter In Operation

Size cutter.	Required hp.	Cap. per hr.	Size cutter.	Required hp.	Cap. per hr.
12 inch	6 to 9	5 to 9 tons	18 inch	12 to 16	15 to 20 tons
14 inch	7 to 10	7 to 11 tons	20 inch	15 to 18	20 to 30 tons
16 inch	9 to 12	9 to 13 tons	26 inch	18 to 22	25 to 40 tons

(Continued on Page 158.)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

ONE DOLLAR PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
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Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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W. H. SCHRADER - - Advertising Manager
D. L. SCHRADER - - Subscription Manager
R. E. HODGES } - - - Assistant Editors
J. C. LOOMIS }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Aug. 11, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.12	62	48
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	98	56
S. Francisco	.00	.02	.01	68	52
San Jose	.00	.00	01	86	52
Fresno	.00	T	00	106	64
Independ'ce	.00	.06	.00	100	60
SanL.Obispo	.00	.00	.03	82	52
Los Angeles	.00	.01	.00	84	56
San Diego	.00	.00	.00	70	60

T. means trace.

The Week.

In the midst of distraction over conflict and turmoil the like of which the world has never seen and could not adequately dream, the American people carries a heart of sympathy for a fellow citizen who stood last week strong in discharge of public duty but in tears forced by the pangs of personal sorrow and bereavement. Every American has shared the grief of this fellow citizen, sad, lonely, bereft of the closest human companionship, just at the moment when the anxieties of public duty made him yearn for the support and encouragement which only a good wife can bestow upon a man, for his deeper enlightenment and strengthening.

Many phases of the sympathy of his fellows in American citizenship have been given words for transmission to our bereaved President, but none, of those which have come to our notice, equals, in significance and simplicity, the following, which was sent from a popular assembly in New York State: "Three thousand citizens of Oneida county, who love their homes, beg leave to offer to President Woodrow Wilson their deep sympathy in his household sorrow, and they pray for him the peace of God."

American Charity.

We do not use the word in its alms-giving sense, for that is one of the last and narrowest of its definitions. Take it, rather, as Lincoln did when he wrote: "with malice toward none; with charity for all." It is manifestly the function of Americans, in this time of cruelty, hatred, greed and ambition, to exemplify charity in our words and deeds and thus reflect the light of Him who is the light of the world. Proper injunctions have gone forth from the central government against infringements of our neutrality by combatants and appeals that we ourselves observe it both in action and in spirit. Each one of us should remember to embody such charity in our daily walk and conversation. We are all Americans—more or less—and we are all in the light of higher liberty and the rights of man; some in the fullness of it; some in its dawning. Let us resolutely refrain from bickerings and quarrelings born of vestiges of the darkness whence we came, as it were, yesterday or the day before. It is not now a question of how much are we Americans, but are we Americans at all, and if so let us lead each other toward that kindly light of charity for all. We are glad to see that such an exhortation is not held to be a sentimental abstraction in the thought of practical men. Where can we find a better sermon for the time than that which a large commercial establishment in Los Angeles preaches to its employes, as follows:

"In the present European war the United States has declared its neutrality.

"Therefore, we believe it behooves every good citizen of the United States to refrain from any argument, discussion or jokes that might hurt the feelings of any sympathizer with any belligerent country.

"The sufferings of the people of these countries will be great, and the feelings of all sympathizers will run high, and it is the desire of the officers of this organization that every one of our employes do all in his power to lighten the troubles of those concerned instead of aggravating them."

All should adopt this as a constant guide during the exciting times which are just beginning. Some of us who have come into the possession of the calm American spirit through generations of inheritance, may find such a course easy. It is, however, none the less the duty of those who have more recently come from foreign lands, where emotions are always near ebullition, to remember that they, too, are Americans in the making, and that their children take the American Register, without act of Congress. Then, too, by doing most for the peace and comfort of our own citizenship, we shall be doing most for a suffering world.

American Gold.

Last week we noted the fact that the United States is a storehouse of gold—the world's most indispensable commodity. Gold never forgets its own interests, but it does deeds of mercy, and in his civilized state man can neither live nor die as he desires without it. Gold may be now most active in killing men, but presently it will be gold alone which can save men from starvation. Economists are working overtime just now in figuring what nations are worth according to their glittering standards. The ordinary reader can only intelligently use their roughest generalizations, such as this: "The revenues of the United Kingdom, France and Russia are very much larger than those of Germany, Austria and Italy. Figures show, moreover, that the wealth of the United States is greater than that of all the nations in the Triple Alliance combined, and exceeds the total resources of the Franco-Russian alliance. It is greater, too, than that of the United Kingdom and Russia combined." The alignment of the nations suggested in the foregoing is not quite up-to-date, but the relative standing of the United States is clear enough. Uncle Sam, both in his money and in his love for his fellowman, a la Ben Adhem, leads all the rest. And there is money in having money. George Paish, editor of the London Statist, who is recognized as the world's foremost statistician and economic authority, says:

"A great war in Europe will probably bring economic advantages to the United States. It will enable it to sell its great crops in places which will give a much greater income than if there was no war. The United States can also become the world's greatest market for capital, and if the American people rise to their opportunity they can do a great deal to mitigate the disastrous economic consequences which would otherwise result in many countries from a great European war. In brief, a great war in Europe will give the United States an opportunity of assuming the post of world banker, by supplying capital freely to countries and individuals in all parts of the globe who need it and can provide the required security. For the United States to gain benefit from the position as the wealthiest nation in the world, it is essential that American investors should not only have confidence in the future of their own country, but also believe that, war or no war, the world will continue to progress."

And thus it appears that American wealth must be administered by the American spirit. The world is not going to the dogs—of war or otherwise. Confidence is the soul of credit, and thus it will surely be, to outrage Shakespeare, not in our banks but in ourselves if we are underlings. Let none be frightened into hoarding; let everyone use his money to make money, and the world will be the better for it.

American Food.

Advices from all parts of the country bring news of the amplitude of food supplies which we can spare to a hungry world which already has collectors in all our market places, representing the warring nations. Naturally prices are advancing and will continue to advance. We lack space even to outline the general facts, there are so many of them. To land food products abroad is just at the moment a problem, but it cannot remain such. The hungry will assume all the risks and the food will go forward. Even if it changes ownership on the high seas, it will bring renewed strength to some famishing members of the human family. For present purposes it is, of course, unfortunate that though the United States ranks second in the world in number and tonnage of vessels engaged in commerce, because of the vast number engaged in the lake and coasting trade, the number of American vessels engaged in foreign trade is less than that of Great Britain, Germany, France, Italy or Norway. Therefore we cannot in a masterful and merciful way deliver food to our foreign customers, and, from this point of view our Panama canal is an internal improvement, and we cannot bring our wandering Americans home unless we send warships after them. Still the food will go abroad and California grain growers will swing largely back to wheat the coming season and will be first with the wheat of 1915 to foreign markets. And if the war continues even through the autumn, the early wheat of next year can almost name its own price. Both the climate and the canal exhort Californians to return to the great wheat product of years ago, so far as land is now available.

California Fruits.

We have two interesting symposia on other pages: one showing what is being done to make our present product of cured fruits immediately available abroad; the other dealing mainly with the year's output of fruits and nuts. There is direct connection between both these collections of expert opinions and observations and the general question of food for the warring and for the rest of the world which is upset by their conflict. Upon California rests the burden of filling the lack on the Atlantic side which has been depending so largely upon importations from Europe. This year's experience may bring to Eastern doctrinaires some realizing sense of the advantage of having home products rather than imports, for though there is small chance of the United States being in a war, the last week's experience shows forcibly enough that we can go hungry through wars elsewhere. Those who are buying sugar now do not need an argument about the injustice of the injury just inflicted upon the sugar States of our own country. The stroke at the home production of sugar has already thrown the nation into the clutches of the sugar gamblers. And whatever else tends to limit our independence as a producing nation will strike in the same way at some time. And what grievous complications and absurdities it engenders! Here are our fruit canners, cut off from the use of customary capital coming from prompt sale of their first fruits, compelled to warehouse their products to the rafters and at the next movement embarrassed by a sensational rise in sugar. But they are working at their problem bravely and may recover from the consumer later. But from a national point of view, what joy is there in recovering from consumers? But this discussion is getting heavy enough to sink a cruiser.

Sadness for the Kids.

Take a lighter phase of it. It is telegraphed from New York that importers of toys are hard hit by the European war and the present indications are with a dearth of the latest productions from Germany, Austria and Russia for the coming Christmas season. The first shipment had just been made on the other side when the war broke out and with the arrival in New York last week of the steamship President Lincoln the last entries were received. Dealers in toys say that if the war keeps up Americans will have to begin to make all of their toys. What an affront upon the memory of Sam Slick, the Yankee clock maker, it has been all these years, to buy mechanical toys abroad. And yet it may be inhuman to begrudge European toy-makers the little prosperity they have secured by their devoted ministrations to the happiness of our children. We are surely sorry that many an American baby may have to go back next Christmas to the rag-doll of his grandmother.

California Consolation.

We find ourselves mellowing-up considerably under the suggestions of the last paragraph and must confess joy that we have other forms of consolation for the Europeans. We hear from Los Angeles that Count Paul von Neindorff, acting for the German army, purchased last week ten carloads of garlic from local dealers, practically cleaning out the supply in southern California. The purchase consisted of 400 sacks to each car, each sack weighing 120 pounds, or a total of 480,000 pounds. The price paid ranged from 8 to 10 cents a pound. The shipment was billed direct to New York. Germany generally buys this luxury from France, but France is delivering other goods in Germany this season. The German problem will be to decide whether half a million pounds of garlic will be too widely attractive to intending captors or whether it will drive them away by carrying an atmosphere fit to vanquish anything short of a super-dreadnaught.

Queries and Replies.

Querists must submit full names and addresses.

Pears and Plums in Upper Foothills.

To the Editor: On page 303 of the sixth edition of your book, "California Fruits and How to Grow Them," the following sentence occurs: "It is probable that pears cannot be grown in the future as cheaply and profitably as in the past, and there is a certain amount of bravery or daring in pear investments at the present time."

I have land in Placer county at an elevation about 2000 feet, which I have been planning to plant to Bartlett pears, which seem to be quite a favorite in that section. Do you think that the condition you set forth in the above statement, still applies, or would apply to this newer foothill section? What precautions would you recommend be taken to keep out the blight as far as possible?

It has also been recommended to me to plant Hungarian plums, or perhaps Diamond or Grand Duke. Do you think the Wickson would do well in this locality? Others have suggested 10 acres of Mission olives, or of winter apples, and 5 acres of cherries. What would you suggest as the best way to assure the greatest reliability of income, and so as to be on the safe side ten years from now?—Reader, Sacramento.

It is unfortunately still true that pear planting, though likely to be very profitable if the trees are handled continually with the utmost vigilance in the cutting out of the blight, is of questionable desirability unless one is willing to do the work and can advance the expense of the operation. Some things indicating this appear on other pages of this issue, giving up-to-date experience in the Sacramento valley. Of course, if you were sure of a place to which the blight had not yet attained, pear growing would be the same old joy that it was before the blight broke out in the San Joaquin valley a little over ten years ago, but one can never be sure of excluding blight by any precaution because the very first bee that flies a few miles from an infested pear tree to your young pear trees might plant the blight therein. We know of no precautions which can be trusted to keep the blight out. The whole problem seems to be in keeping it under subjection when it does arrive.

As for plums, the Hungarian has sometimes been very profitable at the upper elevations in Placer county, and the Diamond and Grand Duke would probably also give good results as coming a little later than the valley plums, but the Wickson or any other Japanese should only be planted after demonstration that they do not bloom too early to escape the frost. So far as we are aware, this Japanese group has not yet demonstrated its success in the upper foothills. The same would be true of the olive, which apparently belongs at a lower level, while winter apples would be excellent if protected from the codling moth. Cherries would thrive if on land well drained enough to escape winter saturation and at the same time moist enough, either by irrigation or seepage, to give the trees regular moisture during the summer season. Both winter saturation and summer deficiency are destructive to cherry trees.

As to the possible profit after a term of years, we do not offer any predictions. That is a matter which each planter has to settle for himself according to the best judgment he can form of conditions past and future.

Almonds on Myrobalan.

To the Editor: I am thinking of planting almonds on myrobalan root in one or two places in my almond orchard where the almond and peach roots have been killed by water. I wish, before doing so, to know of such trees actually in bearing. Can you tell me of any almond orchard or even only a few trees on this root which are thrifty and bearing well? Opinions got from men who should know are very contradictory.—L. G., San Rafael.

In Europe the plum root is largely used for the almond. In this State most commercial trees are on almond or peach seedlings for several reasons: it is more convenient to get such seedlings; their freer growth agrees better with the habit of the almond; they are well adapted to most lands upon which people wish to plant almond orchards; they make a better tree, because the free-growing almond is apt to over-grow the plum root and make an ugly enlargement just above the union and is perhaps liable to break off at that point. But there are bearing trees on myrobalan root and some growers have found them satisfactory. The point is very interesting, and we hope a number of growers will write us of their experience with it—favorable or otherwise.

Tobacco and Lettuce.

To the Editor: A few hints on the cultivation and curing of tobacco would be appreciated. I have not been able to find the subject treated on in any of the Wickson publications. Would also like to know why lettuce persists in running to seed when I do not want it to.—F. H. B., La Fayette.

We have never undertaken to expound tobacco production under California conditions because we have never been able to satisfy ourselves that results have fully demonstrated the success of it. You can get a pamphlet describing the Tulare methods, which have reached widest application, by applying to L. H. Umstead, Exeter. The growing part is easy enough—the trouble comes afterward.

When lettuce refuses to behave normally, it is probable that the seed was gathered from abnormal plants or that you have allowed the plants to become too dry, and then started them up again after dormancy.

Trunk Rot of Walnut.

To the Editor: I have a walnut tree six years old near Mt. Diablo. It has a dry rot in trunk of tree. I have been told that it is caused by some kind of fungus. Can you inform me how to cure it?—F. G. S., Alameda.

Such a bad place in the trunk is usually caused by sunburn, and the proper treatment is cleaning away dead bark to the edge of the living bark and whitewash to prevent further sunburn and decay until the wound grows over. If the wood is decayed, excavate with a carpenter's gouge to hard wood and fill the cavity with Portland cement and then whitewash. The new growth will cover in the cement in time.

Firm Fruit Best on Auction.

[Written for the PACIFIC RURAL PRESS.]

In spite of all of the agitation against shipment of immature fruit, with our present transportation facilities, California must pick most deciduous fruit green enough to reach market firm, not mushy. Besides the settling of the pack, ripe fruit is undesirable for other reasons. Delicious looking highly colored plums would seem most desirable and to command the highest price on auction; but this is not the case. Such plums must be put on the city fruit stands at once and sold to consumers without delay, for they are at the point where a day or two of holding on display, will mean their breaking down and loss.

Several classes of people buy at the auction markets. The foreign fruit peddler predominates in numbers but not in amount purchased. He buys the riper fruit for immediate local consumption. The big buyers do not want so much of it and therefore it goes at a low price. This is fortunate both for the purses and for the digestions of fruit eaters of the cities which have fruit auctions.

The big buyers on the auction markets are wholesalers who reship a large per cent of their purchases to retailers in surrounding towns. Most fruit which reaches the auctions fit to eat cannot be reshipped and the big buyers do not want it and will not pay for it; but demand and pay better prices for such as is still green enough for reshipment.

In looking over the fruit displayed for inspection before the auction sales commence, the writer has seen a surprising amount of it molded or decayed; very likely too nearly ripe when picked, because other fruit in the same lots was sound. Such fruit of course gets absolutely no attention from those who buy for reshipment; and when the buyers for city trade look at it, they count the spoiled ones on the top layer, multiply that by the number of layers, multiply the product by two and figure that number as being spoiled. They consider the labor of sorting and repacking, then they put a mark on their catalog indicating how much that lot is worth to them. At the sale, they will bid that high on that fruit, but no higher.

It is regrettable that our distance from market compels the picking of fruit in which the sugar has not elaborated fully; for a Californian, accustomed to the delicious ripe fruit in California, finds but little in California fruit on Eastern markets except fiber and water. This is especially true early in the season when peaches and many varieties of plums are just beginning to come; the earliest pickings are more generally green than the later fruit of the same kind; because of the general rule that the earliest fruit brings the highest prices.

But eating the ripest available on eastern markets in the middle of June has proved distinctly disappointing, and suggests that there is a wide field open for such an improvement of conditions as will get California fruit to Eastern eaters, with the California flavor and sweetness.

Until that means of improvement is found, it behooves growers to grade and pack with the utmost care; for this they can do, and this they must do, to hold the trade, develop appetites for the increasing production, and to meet the competition of other growing fruit sections.

And to hasten the time when each grower may know just how long he may allow fruit to remain on the tree and still get it to auction in the condition most demanded by those who pay money for it, every one who packs fruit will do well to watch the reports on the condition of his fruit when it reaches the market, then make whatever changes may be necessary in time of picking and manner of packing until the finest adjustment is reached.

A TOKAY CLIMATE.

[Written for the PACIFIC RURAL PRESS.]

"It is dry hot weather that puts sugar into table grapes, but I can't see that it makes any difference in the color. Around Woodbridge, they prune grapes for open centers claiming that exposure to sun and air colors the grapes better. But I've seen folks there skin all the leaves from their vines and still the grapes would not color, so they had to be sold as 'white Tokays.' They were as sweet as any, but white grapes are harder to sell," says Charles Willis of Lodi.

"White Tokays seem to be sports, for a few may be found among a large number which color perfectly. That shows that the difference in color is not caused by difference in climatic conditions. But the coloring of Flame Tokays is due, not to sunlight but to moisture. They color fast in damp, cloudy weather. That is why we raise Tokays so successfully here. The dews at night in summer are so heavy that my auto cover is often soaked when I leave it overnight in the country where I have no garage," says H. F. Ellis, manager of the Fruit Exchange at Lodi.

"They can't get the required color on Tokays south of here because it is so dry night and day. We can't dry raisins here on account of the night dews. A Tokay climate is hot and dry daytimes to develop sugar and discourage mildew as well as to encourage the fuming of sulphur to kill mildew, and moist cool nights to get the marketable color."

BEHAVIOR OF ETTERSBURG STRAWBERRIES.

To the Editor: Commenting on Mr. Dexter's difficulty with Ettersburg No. 80 strawberry, I am of the opinion he is using too much water and his soil is too rich. Slow up a bit, is my advice. With No. 80, and I might also include all Chiloensis hybrids in general, moisture and richness of soil in excess tend to small berries rather than large ones. These varieties will flourish on soil that is not rich enough to grow ordinary strawberries, and that is the sort of a place where one will get the most perfect berries.

Regarding some of the blossoms being sterile, I will say that in the Chiloensis species individual seedlings or varieties, if I may call them such, are purely male while others are as distinctively female. In the hybrids we rarely get purely male or purely female, but a tendency to bi-sexual blossoms on the first flowers of the truss and male blossoms on the terminals. The proportion of the male blossoms that are incapable of developing into fruits varies somewhat, but I have never made any study of the case to determine its causes or control. Naturally, those varieties I select for their value here are selected because they fit conditions here, and if it were not so they would not be selected. In the vernacular of the plant breeder, the plants are predisposed to be "crazy," and a crazy plant is like a mule: you must reason with him.

Briceland. ALBERT F. ETTER.

[We suppose Mr. Etter means "reason about him." One can hardly "reason with" either a "crazy" or a mule, to advantage.—EDITOR.]

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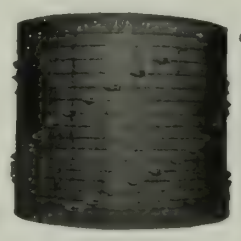

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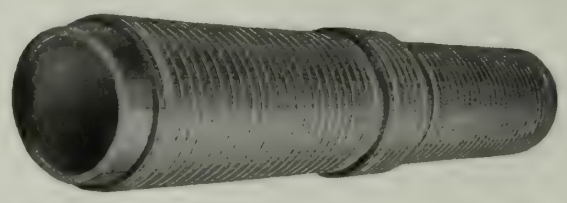

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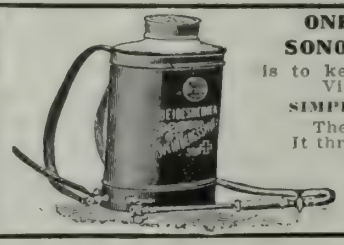

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THOMAS R. BROWNE, Stockton, Cal.

Nitrogen for Citrus Orchards.

[From the Address by W. M. Mertz of University Citrus Station at Riverside, at the Davis Fruit Growers' Convention.]

Were you to walk through the plats constituting the fertilizer experiment at the Citrus Experiment Station, you would note that wherever nitrogen had been used there was increased growth, better color and heavier yields. This holds true whether the nitrogen had been added through the medium of dried blood, nitrate of soda, or stable manure, with the best results following the use of the organic sources.

Dried blood is produced in very limited quantities and is very expensive; thus its use is becoming almost prohibitive to many growers.

Stable manure is also produced in limited quantities. Nitrate of soda is at present the cheapest source of nitrogen, but seems to have factors which make it less desirable than an organic source.

It would seem then that a nitrogen fertilizer from an organic source, inexhaustible in supply and reasonable in cost, is practically a necessity to permanent success in the citrus industry.

The Riverside Experiments.—Realizing the importance of nitrogen as a citrus fertilizer, and the need of increasing the organic content of the soil, the University of California inaugurated an experiment at Riverside to determine the value of legumes as winter green manure crops in 1909. Various legumes, such as vetch, peas, and clover, are grown in tenth-acre plats, with check plats on which a non-legume, such as barley or rye, is grown. One check plat lies next to legume plat.

We are now growing nine different varieties, so the experiment consists of nine legume plats and eight of the non-legume plats as checks. The seeds of these legumes are all sown during the early part of September and are treated uniformly throughout the winter.

The nine legumes used are as follows: Common vetch, purple vetch, Vicia ervilia, burr clover, Melilotus clover, Canadian field peas, Tangier peas, lentils and fenugreek. The non-legumes used in the different years have been barley, alfilaria, and rye.

Corn, potatoes and beets are planted in plats running the opposite direction from those previously occupied by the covercrops. Thus each covercrop plat has growing upon it during the summer the same sized plat of each vegetable used. During the growth of these crops, 270 to 1080 pounds of nitrate of soda per acre is applied in three applications to every second non-legume plat. Uniform cultivations and irrigations are given all plats.

The following averages cover the work of five years, except that the averages of Melilotus clover and the vetch, Vicia ervilia, cover but the last four years' work; while the purple vetch was grown for the first time this past winter.

Purple vetch (Vicia atropurpurea), 18¼ tons per acre, Tangier peas, 14, melilotus clover (Melilotus indica), 12¾, Fenugreek, 12⅓, Common vetch (Vicia sativa), 12, Lentils, 12, Burr clover, 12, Barley and rye (average), 12, Bitter vetch (Vicia ervilia), 11½, Canadian field peas, 9.

The total cost of growing these legumes including cost of seed, cost of sowing, and two extra irrigations averages about $8 per acre. This expense was saved by not cultivating during the six months the land is occupied by the cover crop. Thus at the time for plowing, in early March, without any additional expense in handling the orchard, we have grown on the land a large amount of valuable organic material.

Gains by Use of Nitrogen.—The average increase of all crops following cover crops, in pounds actually produced on plats receiving nitrogen from cover crops or nitrate of soda over the yield of the barley plats receiving no nitrogen was: Tangier peas, 5763; Melilotus clover (Melilotus indica), 5573; barley plus 1080 lbs. nitrate of soda, 4903; Canadian field peas, 4606; lentils, 3418; Burr clover, 2883; barley plus 540 lbs. nitrate of soda, 2503; fenugreek, 2454; barley plus 810 lbs. nitrate of soda, 1779*; vetch (V. ervilia), 1585; vetch, common (V. sativa), 992*; barley plus 270 lbs. nitrate of soda, 462.

The starred plats lie next to the public road and suffer certain losses for this reason, and so in reality cannot be compared with the others. Use Vicia ervilia when comparing the vetches with the other legumes as to their effect on the crop following.

This increase could only be due to the nitrogen, as the actual organic material turned under was as great on the barley plats without nitrogen as on those growing legumes.

The barley plats required large additions of nitrogen to bring up the yield of the crops following to the standard of those plats where legumes had been grown and incorporated into the soil.

Melilotus Clover.—From a twelve-ton yield of Melilotus clover, we have an effect equal to that resulting from an application of 500 to 1080 pounds of nitrate of soda to the acre, costing twelve to thirty dollars.

The Tangier Pea.—The Tangier pea and the purple vetch, introduced during the past 15 years by the U. S. Department of Agriculture, are very promising. The Tangier pea is of very vigorous growth, and in the five-year average exceeds all others in tonnage of green tops produced. It has also given marked increases in yield of field crop following its use as a cover crop. It has, however, one great fault: the seed is very difficult to produce, as the pods burst and shatter the peas very badly when ripe.

Purple Vetch.—The purple vetch had been grown by us for only two years; and but once in our regular plat experiment. It has, however, yielded a wonderful tonnage of green tops per acre and grows more rapidly in the fall than any other legume tried. It is aphis resistant and so vigorous that weeds have absolutely no chance to develop.

Professor McKee has been working on this vetch for several years and has been able to establish the seed-growing of this variety in Oregon, and this year (1914) for the first time a limited quantity of this seed will be available for commercial planting. Its features, such as aphis resistance, rapid and early-fall growth, and its weed-proof nature, make it a plant worthy of extended trial by citrus growers and all others interested in green manure crops.

The Yellow Melilot.—Of those varieties which we have tested thoroughly, none gives such promise as does the sour clover (Melilotus indica). This variety has given the largest increase in the crop following of any legume of which seed is available; and for soil types similar to the decomposed granite soil of this station, we believe it will be hard to equal.

It grows very well on the heavy red soils of West Riverside, and in its wild state seems adapted to quite different soil types. Broadcast about thirty-five pounds of seed to the acre and harrow it into the soil. Follow sowing with a thorough irrigation; for since the seed can only be sown at very shallow depths, the soil must be wet practically to the surface if a good germination is to follow. Otherwise, the plants will not appear until the fall rains.

Success with any clover demands better moisture conditions during the early stages of growth than are required by such plants as the vetches or peas having larger seeds, which allow a deeper planting and furnish the tiny seedlings more nutriment from the food stored in the seed.

We believe, however, that where extra water is available the benefits derived from the deeper rooting system and more lasting nature of the organic material will amply repay the slightly greater expense incurred in the handling of clover.

Practical Suggestions.—Plant that variety of legume which in your community gives the largest tonnage of green tops per acre. If possible sow seed during September.

Determine what is the average seedage per acre in your section and add 50% to get the amount of seed you shall sow. More poor results with cover crops have been due to insufficient seed than to almost any other one cause. The more seed sown to the acre, the more of the legume you will have, and the less weeds, which add no nitrogen to the soil.

Sow preferably with a drill after thorough irrigation on level land where the permanent furrows may be made very shallow; otherwise, broadcast the seed and cultivate into the soil just before the September irrigation.

Never sow a cover crop in an orchard when the available water is only sufficient for the trees.

In sections where the aphis attack the vetches and peas, use one of the clovers or fenugreek.

Do not over-irrigate your cover crop, as the excess water in the soil will stimulate a late growth of the trees, making them less resistant to cold.

Plow the green crop under early and plow deeply.

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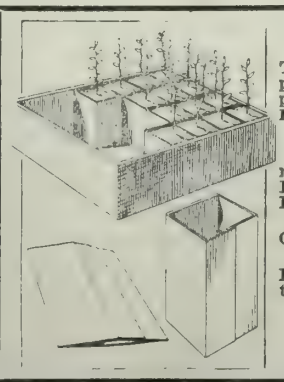

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Write for sample and price. We also Manufacture Perforated Tree Protectors. Over Three Million of them sold last season.

THE EXPAN PROTECTOR CO.,
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ALEXANDER PIPE COMPANY

OFFICE—254 No. Point Street, San Francisco, Cal.—WORKS 1611 E. 6th Street, Los Angeles, Cal.

War and the Dried Fruit Market.

[Written for the PACIFIC RURAL PRESS]

"If the Germans lose their navy so that shipping is safe on the sea, the dried fruit market will probably resume its natural condition, with perhaps an upward trend in prices, depending on how long the war continues," said Max Schuckl of Schuckl & Co., San Francisco.

"Just now we can't get boats to leave New York, we couldn't get insurance if they did, and we can't get the London financial exchange necessary to do business on. Everything is tied up awaiting developments, but by the time your paper is mailed, the business may have opened up.

"Maintaining an open source of food supply is vital to England, so that if she assumes the war risk on shipping, as there is talk of her doing, we will be moving dried fruit at once. A fleet of eight or ten merchantmen led across by a British war vessel with another warship to guard the rear, may very soon be the system that will relieve our present congestion.

"The price of peaches will not be affected, because we don't sell more than 20 cars a year to England, and perhaps 30 cars to Germany. Apricots, being more of a luxury, may drop in demand and price. But prunes are a real foodstuff and will be needed.

"Foods are contraband of war. There is no hope that England would allow any to go to Germany. But only one California packer had sold or hoped to sell any amount to Germany, because they were depending on the heavy Bosnia-Servian crop, so the war doesn't yet affect the market in Germany. But if Austria gets the Servian crop by conquest, Germany will get what Austria doesn't want, and if the war ends soon she may buy of the United States. When shipping is safe we will begin selling prunes to England. Jobbers there may re-sell to Holland, Belgium and France. The crop in France will probably supply that nation alone.

"There is no danger that the packers will repudiate contracts. They are only asking growers to withhold delivery till the packers can sell some and get capital to handle more."

"While the war problem will affect our green apple shipments considerably, we have great confidence that it will improve the price of dried fruit. In fact, we are not losing any sleep over the problem."—Sebastopol Berry Growers, Inc., per I. N. Cable.

"The effect of the war on dried fruit has so far been depressing, especially on apricots and prunes. We ship few peaches or pears to Europe. Germany will be practically closed for good until the war closes."—Mr. Baker, of the J. B. Inderrieden Co., San Francisco.

"The war will have no effect on beans here, because any demand that may come will be supplied from New York first, then from Michigan."—Mr. Bunker, of Barnard & Bunker, San Francisco.

"As a rule, packers pay cash for practically everything that they buy. Of necessity they are heavy borrowers during the harvesting season. Shipments of their products begin in August and continue during September, October, November and December, letting up after the first of the year.

"Under normal conditions as fast as shipments are made, packers are able to realize on such shipments. No packer—no matter what his financial standing—is able to finance an entire pack without making shipments. As the bulk of the shipments during August and a large portion of September are for export, it is quite evident that a packer will not be able to realize on any such sales that he has made, under existing war conditions.

"Packers of canned fruit, handling a perishable product, must take it or leave it as it ripens. So far as is known, all packers of canned fruits are receiving fruit that they have under contract and have until the last few days been paying for the same in the customary manner, but under existing conditions they cannot continue to pay cash for their materials on delivery. There is little question but that the bulk, if not all of the sales for export will be required sooner or later, and there is no reason why the domestic market should be disturbed by the European war.

"Packers of dried fruit are receiving anything that can be packed and shipped, but as it is impossible to make export shipments at present and as the bulk of domestic shipments are for mixed cars, the movement is not large."—California Fruit Canners' Association.

"It is rather hard to state just what the effect of the European war will be on dried fruit, but there is no doubt that breadstuffs, meat and articles of that description will advance very materially, and we believe that after a little we shall see a much increased market for California dried fruits. We see that President Wilson is endeavoring to have the various warring nations agree that foodstuffs shall not be considered contraband of war and that more than likely on account of the large supply that Europe will have to draw from this country, he will meet with some measure of success. Should he be successful, we believe that a strong demand with advanced prices will be the result, and if Congress will permit foreign vessels to fly the American flag it will help matters a great deal. We are informed that most of the dried fruit packers have refused to accept delivery from the growers for export shipment. It is hard for the grower to determine whether the fruit he has sold is for domestic or export shipment, so it looks to us as if this fact might be used to bear the price. We sincerely hope that growers will not get frightened and commence to unload at prices that they more than likely will be sorry for, this especially on peaches, on which we later look for an advance, for when the grower is offered a price which is less than the cost of production he can better afford to hold his product than when it shows a profit to him."—H. M. Ellis, Manager California Cured Fruit Exchange.

An unexpected situation has developed in the dried fruit business owing to the suddenness with which hostilities started in Europe and the almost total cessation of shipping facilities across the Atlantic. It is believed, in fact recent cables indicate, that arrangements will shortly be made by

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American Wonder—Premium Gem—Yorkshire Hero—Nott's Excelsior—Telephone—Gradus.

$8.00 per 100 pounds f.o.b. Los Angeles.

Other "Seed at Low Price and NO Price can Buy Better."

CORRESPONDENCE SOLICITED.

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Wholesale : : : : : Retail

V. A. Peterson, formerly of Blacks Station, Yolo county, wishes to announce that he has formed an EXCLUSIVE ALFALFA SEED COMPANY whose principal place of business will be here.

250 tons of first-class seed now contracted for. NONE BETTER. We are inspecting these fields daily for noxious weeds and dodder. We are prepared to guarantee our seed as to germination and cleanliness.

25 years experience in the alfalfa seed game. Write us.

V. A. PETERSON ALFALFA SEED CO.,
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Trees that grow and bear true to name. Now booking orders for next season. Write us now about what you will want.

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We are now booking orders for French, Imperial, and Sugar Prunes on the **Myrobolan root.** Also Tuscan and Philips Clings, Muirs and Elberta Peaches, Plums, Cherries, Almonds, Olives, Walnuts, Pears, Apples, of the leading and best varieties.

Stock first class and guaranteed true to name.

Write us now for prices.

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which food products of all kinds may be safely transported to most European countries, as the business is of too great a volume and of a character necessary to the existence of the countries themselves to permit of its absolute cessation.

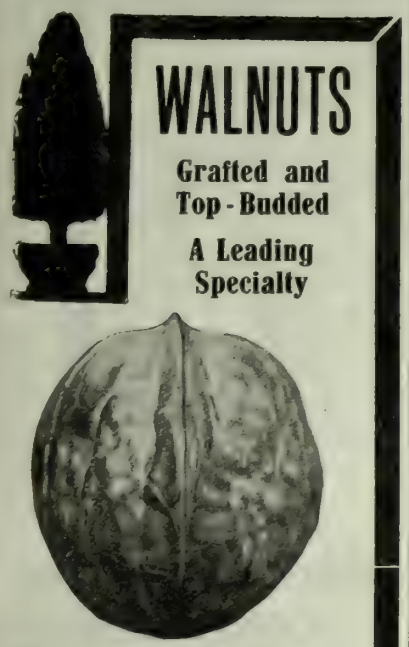
In the meantime packers and growers are co-operating in a way to prevent any temporary demoralization in values, as it is believed that ultimately the situation will not only right itself, but will result in much higher prices on most lines than prevailing today. No packer, so far as we can learn, has attempted to, in any way, evade his contract, but is asking the growers to co-operate in an effort to enable packers to move the crop at the prices under contract even though it takes longer than usual to do it. Shippers whose business was both export and domestic are arranging with their growers to deliver stock as they are able to pack and ship same on their domestic orders and have received a portion of the goods sold for export, requesting the growers to hold the balance until shipping facilities are normal.

The goods sold for shipment to the domestic trade will be taken as ready and as it is possible for the packers to receive and ship same. We believe the growers in every district appreciate the situation and are giving the packers assurance that they will meet with their views, for it is to the mutual interest of both that the goods go out on contract prices, and we have heard of no packer who has attempted to, or has any idea of repudiating his contracts in any way.

There are different views taken as to the result of the present war in Europe. It looks as though the war zone would include the fruit-producing districts of Bosnia and Servia, with the situation in France doubtful. Even though the women of Europe do a great deal of field work, the withdrawal of practically all of the men to military service means that a large share of the crops must naturally go to waste, and with the scarcity of available labor more attention will be given to saving the grain crops than articles like fruit, which although dedesirable, are not as necessary as grains of all kinds.

Europe as a whole has been depending upon the Bosnian crop this year for its supplies of prunes, and the quantity purchased from California has been extremely light, far less than normal. If supplies from Europe are unavailable, it seems to be the general opinion that later when it is possible to ship goods, there will be a demand for stock from this State that will have a decided effect upon values, and by many it is believed that a new high record will be reached.

In the meantime, the domestic trade are buying sparingly, awaiting developments, though there is some business passing all the time.—J. K. Armsby & Co., San Francisco.



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French and Imperial Prunes, Bartletts and other Pears; Tuscan and Phillips Clings, Fay Elbertas and other Peaches. Cherries, Plums, Apples, Grafted Walnuts, etc. Stock pure and of best strain. Place orders promptly. Prices reasonable.

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For good roots, thrift, and hardiness they can't be beat. Quality considered, they challenge all competition. We are prepared to furnish the best of everything — Olive, Almond, Peach, Pear, Plum, Prune, Apricot, Cherry, Apple, Walnut, Grape, Quince, etc.

Orders are being booked daily and we urge you to not delay. Write us.

Silva-Bergtholdt Nursery Co.,
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California Crop Report

Many letters received from special correspondents and from monthly reports of horticultural commissioners show that the outlook is for good average yields of all crops in California this year.

Grain crops as a rule are large, though the barley crop is not as large as early predictions indicated. Last year's crop of barley was about 316,000 tons, while this year the present crop estimates are that it will be about 850,000 tons, or the largest ever produced.

The hay crop will not be as large as thought for, owing to the fact that the low prices offered in many sections is causing the farmers to stop irrigating and thereby losing two cuttings. In some parts of the State grain and alfalfa hay is selling for $9 to $13 per ton, while at this time there is said to be lots of baled alfalfa along the dykes in central California offered for $5 per ton.

Hops will be less than last season, the Sacramento section being 20% short, and the Sonoma district 25% short.

Last year the Sacramento valley produced 77,000 bales and will this year raise about 55,000 bales; the Sonoma district last year produced 35,000 bales and this year will have about 27,000 bales; the Ukiah section last year gave 8,000 bales as against 6,000 expected this year. The Oregon crop is not extra good on account of rain, present estimates for the State being 110,000 bales.

In a letter to this office regarding the walnut crop, C. Thorpe, manager of the California Walnut Growers' Association, writes: "The present indications for the southern California walnut crop are that the walnuts this season will be of the finest quality produced in California for a great many years past. The size will undoubtedly be above normal; the nuts well meated or filled; and the harvest will undoubtedly be a week or two earlier than usual. The tonnage will unquestionably be below normal, but owing to the increased acreage which has recently come into production, shipments will probably run between 21 million and 22 million pounds, as against last year's production of approximately 22½ million pounds. With the present bearing acreage a normal crop of walnuts in California should run to almost 30 million pounds. Owing to the advanced condition of the crop at this date, there is little likelihood of any serious damage befalling the crop between now and harvest time."

C. W. Beers, of Santa Barbara, in writing this office, states that there is promise of 140,000 sacks of beans in the Lompoc section and 170,000 sacks in the Santa Maria section this season, also that while the acreage of beets has been cut down some, the crop is heavy, and that 70,000 bags of onions and 80,000 bags of potatoes are the present estimates for the county. Regarding the fruit crops, he says that the apricot crop was unusually heavy and of excellent quality. Apples are above average both in tonnage and quality.

H. G. Turner, of the Grange Company at Modesto, in writing of conditions in Stanislaus county, states that the crops of watermelons and cantaloupes are unusually large and of fine quality, but says that dealers in Turlock are only paying $2 to $2.50 a ton for watermelons. Cantaloupe prices are also very low in the Turlock market. The peach crop in the county is much above the normal in quantity, he says; perhaps five or six times as much as that of last year, but the quality is not so good as last year, although it is much superior to the fruit received by the local canneries from other localities. Regarding grapes, he says that the weather has been unfavorable and each cluster contains many unmatured and faulty berries, therefore he does not

(Continued on Page 163)

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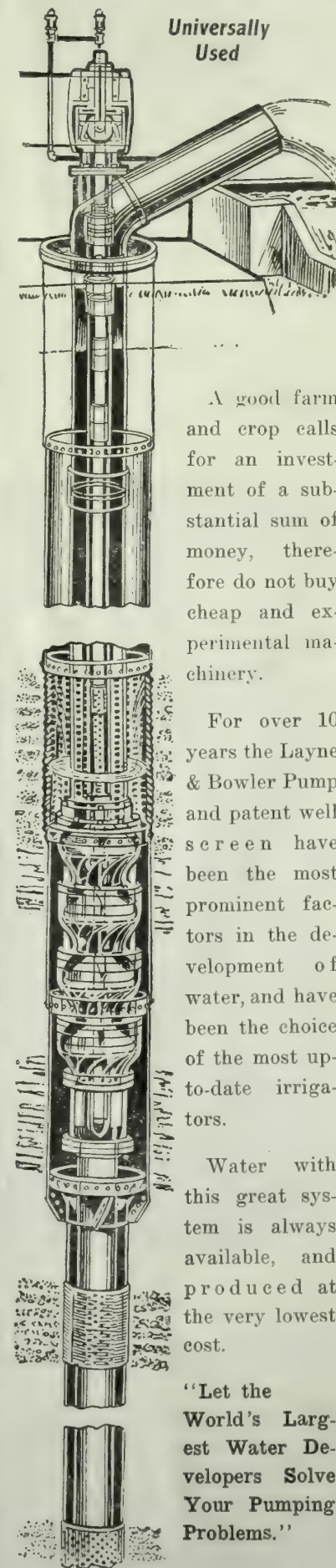

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Constructive Agriculture—No. 32.

FIGHT PEAR BLIGHT NOW.

[Written for the PACIFIC RURAL PRESS.]

"The next 50 days is the best time of the year to fight pear blight," said Hayward Reed in his Sacramento pear orchard recently. "The sap is not flowing much to furnish soft tissue for the germs to breed in. The dry hot weather kills all the bacteria you expose; it dries up the twigs you cut off and saves the time that would be required in wet weather to pick them up as soon as cut.

THE BACTERIA THAT CAUSE PEAR BLIGHT, HIGHLY MAGNIFIED. (U. S. D. A.)

"When the fogs come, every cut you make will be a breeding place for germs that may fall on it in water dripping from infected places above. If you happen to leave one germ alive, conditions will be right for it to multiply.

"I used to let things slip along and cut out the worst of the blight; but this last wet spring after a moist south wind at blooming time, put my Sacramento orchard in bad shape. I know now that you must fight blight to the limit, all the time. If you don't get it, it will get you. It will cost me $5,000 to cut the blight from my orchard this year."

Truly Mr. Reed is practicing what he preaches. About six men are spending their whole time "cutting blight." So soon as careful, conscientious men are available, he will have 25 or 30 men at it.

Last spring, due to the rush of work in his orchards elsewhere in which he planted 40,500 pear trees at Vina and Marysville, the only blight work done on the Sacramento orchard of 18,000 trees was to cut off all signs of the disease close to the trunk or roots so it would not get beyond control.

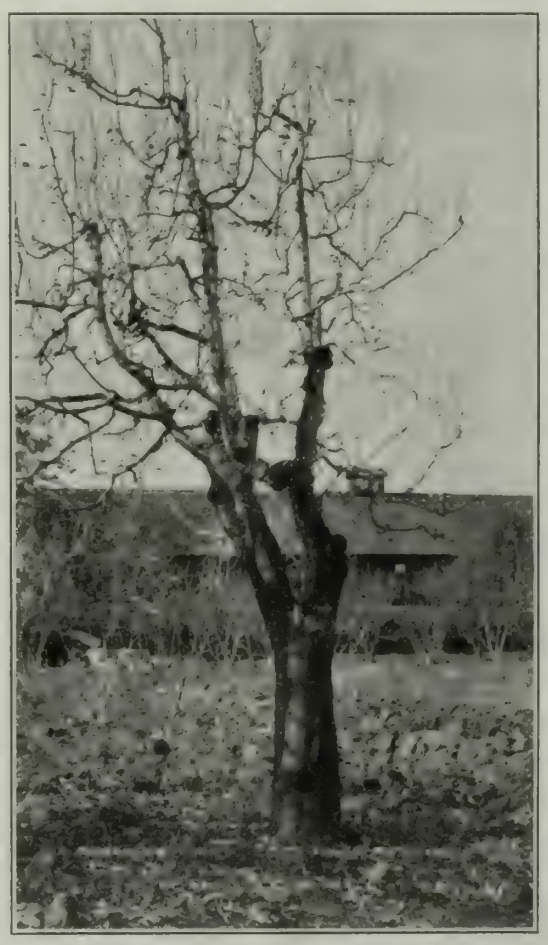
The year before, he had a few men cutting out the blight, men who were supposed to be careful. But they did not cut far enough below visibly infected spots—they did not examine the stubs to see if they were absolutely healthy, and quite often they let the sponges get dry, with which they were supposed to disinfect their tools. But oftener still, they would just rub the sponge carelessly over a saw or scraper and leave a thousandth of a square inch untouched by the disinfectant. After cutting through diseased bark, that thousandth of a square inch might contain several hundred very lively bacteria which went to work promptly on the next tree cut with those tools. The result of the little carelessnesses showed up soon, but were not noticed or cared for; and they got so busy that this spring many trees are being dug out, roots being followed several feet underground. More careful cutting last year would have saved the trees, would have given a crop this year, would have avoided all the labor now necessary to dig them out, and would have saved the land for pears. Now, where a pear tree must be dug out for blight, no other pear tree will be set, but other fruit will be mixed in, to grow at a disadvantage among the bigger trees. It is a high price for Mr. Reed to pay for the careless cutting which occurred because he was unable to watch the men all the time.

When Mr. Reed was informed that a report was out that he was giving up the fight, he said: "Not while I have my mind. I've never thought of giving up, and since last spring I see that there is no fooling with it. Might as well let the sparks from a big house afire scatter all over the neighborhood. I'm cutting out every sign of it, and then some. I'll have it cured this season. Of course, new infections will necessitate keeping up the fight as long as pear trees grow, but it will never again get the start of me."

The careless work of last year made a better system of supervision necessary. A reliable and conscientious man with several years' experience in Oregon pear blight was engaged primarily to do nothing but inspect the work of the others. This is F. M. Broker, who has charge of operations on the Reed ranch and who on the morning of the writer's visit had found five cases before 9 a.m. where blight had been incompletely cut out.

Now, while he has only a few men, Mr. Broker also inspects all trees for blight on their roots. This he does by gouging through the bark at various places near the base of the tree

BLIGHT, NEGLECTED IN LARGE LIMB, DESTROYED THE LIMB AND HAD TO BE CUT FROM THE WHOLE SIDE OF THE TRUNK.



HALF OF THE BEARING SURFACE WAS TAKEN FROM THIS TREE BY REMOVAL OF LARGE LIMBS KILLED BY BLIGHT. ONLY HEROIC SURGERY COULD SAVE THE TREE.

(Cuts furnished by courtesy of State Horticultural Commission.)

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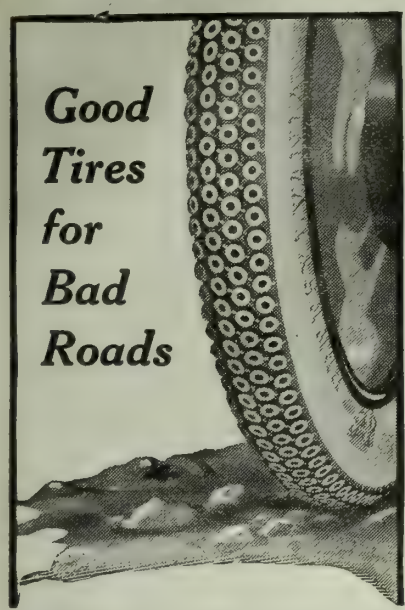

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Guaranteed for 4,500 miles, and averaging nearer double that distance.

Oilproof — through and through. You need never fear the fresh oiled road if you have VC's.

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Dealers in PAPER
37 FIRST ST., SAN FRANCISCO
Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Ore

with a sharp chisel whose cross-section is rather pointedly half-oval. A discolored cambium subjects the tree to the root surgeons, two careful men who work on the roots only.

He also mixes the corrosive sublimate, four tablets per quart of water, and insists that all of the disinfectant used shall be clean and powerful. It is carried about the orchard in bottles and is applied wherever needed to sponges, one of which is attached to a string, carried by each man. As soon as any cut is finished, both the tools and the wound are thoroughly rubbed with the disinfectant sponges, never waiting until ready to make the next cut. This is double precaution, but it pays better than the continued loss of trees.

Joe Green, of Courtland, who has made a marked success of pear growing and blight fighting, calls attention to the danger of this method in the hands of any but the most careful men. He buys the sublimate by the case, uses twelve tablets per two quarts of water, and practically immerses the cutting tools, using a cloth swab on a stick to wash the parts not immersed. That system is pretty sure to leave no saw teeth or nicks and corners untouched by the disinfectant; no bacteria may be distributed to the next tree.

On the Reed ranch, the roots are doctored first, so that trees found incurable may not have had a lot of labor applied to the tops. Dirt is dug away two or three feet from the diseased side of the tree and the root cutters clean off the bark past all blight indications and often cut off the whole root. Most of it is found near the base of the trunk, though many are infected by the germs spreading down from succulent sucker growth, at a distance from the tree; and any root near enough to the surface to be bruised by the plow is likely to be infected. Wherever a spot of blight is found, on the base of the trunk or the big roots and limbs, the bark is cut away from over and round it in all directions until no more reddish or brown or black inner bark is found. One favorable feature is that the bacteria spread up and down more than crosswise of the root or tree which seldom needs to be completely girdled to get out all blight. When the farthest edges of infection are outlined a strip of bark about two inches wide is taken from around the area which of course has already been stripped of bark. This gives leeway for getting beyond unseen infection. At this season the hot dry sun and air would probably kill all the germs anyway, but Mr. Reed is taking no chances. He has the bared surface disinfected, being careful to put the sublimate into the edges of the healthy bark with a cloth swab on a stick.

Then a chisel scraper is used. This is made by bending about an inch of the end of a chisen to right angles with the rest of it and sharpening all three edges and the corners of the bent section. With it, the blight cutter scrapes off all discolored tissue. This sometimes extends 1/16 or ⅛ inch into the wood. Then with the corners of the scraper he takes off a shaving from the corner of bark and wood, disinfects the tool, puts his initial on the scraped area and leaves it for Mr. Broker to inspect.

Other men work on the tops before the roots are finally inspected, if the trees can be saved. With stepladder, pruning shears, and saw, jacknife and scraper, blighted twigs are cut a foot or two below the last signs, and the blighted bark on trunk and big limbs is cut out as on the big roots. Scraped areas are disinfected with swabs from the bottle each man carries, and when each seperate piece of cutting is finished the tools are well disinfected. Where blight runs down a twig to a big limb, the twig is laid in a separate pile so the inspector may know that the disease has been followed further. The end of every limb that has been sawed off is peeled a few inches back from the cut by means of a recurved chisel. If any blight is found there, the stub has to come off a foot or two more.

If the inspector finds a limb not so peeled, it indicates carelessness in the man whose initials are marked on that tree; and he gets a caution. If he has cut through any blight and left it without further following, he cannot work there any more.

A big limb was affected a few inches above the crotch and Mr. Broker condemned it in Mr. Reed's presence.

"That crotch is worth $10," said Mr. Reed.

"We'll try to save it;" and the diseased limb was cut just above the crotch. Mr. Broker peeled back the bark, found blight, and the whole crotch had to go.

A visitor picked up a shovel left in a hole where dirt had been dug away from the roots of a tree. He jabbed it around the roots and was quickly requested not to do that because it might not have been disinfected; and anyhow the fewer bruises, the less chance of disease in the roots.

About two weeks after a tree is doctored, all the wounds are inspected. If the edges of the bark are sizzling with fine foamy specks, the bacteria are active, and the bark must be cut away still farther to get beyond the last one.

Four to ten trees per day per man is the limit in Mr. Reed's orchard, though parts of it are not so serious, especially around the roots. It has cost Reed already this year $1500, but as he says, "If you grow pears you must fight blight early and late, but especially early."

[Anything new, developed by the experience of our subscribers, will gladly be given space during the next few weeks.—EDITOR.]

PLANS AND PRIZES FOR APPLE SHOW.

San Francisco business men have launched a movement to co-operate in lending generous and substantial support to the California Apple Show which will be held here October 1 to 11.

Not only is industrial space being taken up rapidly, but a number of the San Francisco business men and merchants have announced the gift of handsome silver trophies to be awarded to the winners in the various classes. To start off this list, The Emporium has arranged to give a silver tea set and tray; James D. Phelan has donated a silver cup; two immense trophies have been given jointly by the First National Bank and the Federal Trust Company. Other elaborate silver trophies have been given by the Bank of Italy, George Haas & Sons, S. N. Wood & Co., the Alcazar Theatre and the Turner and Dalnken Circuit. In all between 35 and 40 trophies will be awarded at the apple show in addition to cash prizes totaling more than $8000.

Mayor Rolph and the Board of Supervisors have approved all of Manager Harry Perkins' plans for the arrangement and fantastic lighting of the three huge tents at Market and Eighth streets and have given permission to decorate Market street from the Ferry building to the show grounds and to hold a parade and apple shower on the opening day.

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AGRICULTURAL REVIEW.

Deciduous Fruits.

A dispatch from Fresno states that dried Smyrna figs have advanced in price, from 4 to 5¼c a pound, six carloads having left Fresno in the past week at that figure. This raise is attributed to the cessation of all European shipments since the beginning of the war. About 10% of California's last year's crop is all that is now on hand, according to estimates made at this time.

Returns from 22 of the 27 carloads of Alberta peaches shipped from Stanislaus county beginning July 18 show prices of $62.50 to $78 a ton, or a net return to the growers of from $17.50 to $22.50 a ton. The shipments were made under the supervision of J. S. Rhodes and Guy C. Whitmore.

A representative of the Griffith & Skelly fruit-packing house in Chico reports that most of the fruit in that section has been contracted for, which will make it impossible for that company to open their Chico plant unless a sufficient amount can be secured that is not now known of.

According to dispatches from Gilroy, Santa Clara county, packers there will continue to accept fruit and will not cancel contracts, as has been frequently reported they would do, during the past week.

Early ordering of nursery stock is being noticed in Sutter county at this time, most of the larger nurseries already having their agents at work there securing orders for next year's deliveries. Athough the demand for all kinds of trees is said to be good at this time, prune and cling peach trees are mostly in demand.

The new cannery at Reedley reached a daily output of 32 tons last week, most of the fruit being freestone peaches from orchards in that vicinity.

The entire crop of pears around Paso Robles has been sold to San Francisco and Los Angeles buyers at satisfactory prices. The pear acreage in that section has been materially added to the past few years, and it is expected that next year's crop will double that of this year. A large acreage will be planted to that fruit next spring.

In order to have a farm adviser for Kern county, the Board of Supervisors of that county has made arrangements for appointing the adviser horticultural commissioner also, which will enable them to spend the required amount of money necessary for the salary of an adviser.

Fruit shipments from Colfax, Placer county, have been under way about two weeks, and while the fruit is late on account of the altitude, good prices have prevailed. A new shipping shed has been erected by the Southern Pacific company, during the past summer, which greatly aids shippers.

The peach season has about finished in the Lodi district of San Joaquin county, and drying is in full swing. The grape shipping season will start from this section about August 15, Black Princess being the first ready for shipment.

In his report to the Supervisors of Fresno county, Fred P. Roullard, horticultural commissioner, states that peach shipments have begun to reach the markets, and that grape packing will be started at once. Navel oranges in that county are showing up well, but Valencias will be over 75% short on account of excessive dropping. The abnormal crop of grapes has been reduced to a normal one by the sunburn last month.

Three companies are operating in the Ukiah pear districts this year, and the harvest is in full swing this week. Prices range from $30 to $35 a ton for canning grades.

Peach and prune growers were in the midst of harvesting activity last week, in the vicinity of San Martin, Santa Clara county. Prunes there are said to be about one-third of a crop and peaches a rather large crop.

According to estimates made by the manager of Rosenberg Bros.' packing house at Yuba City, that company will pack about 3,000 tons of fruit this season, composed of 1,500 tons of prunes, 400 tons of peaches, 500 tons of raisins, 300 tons of figs, 100 tons of almonds, and 150 tons of other less important fruit.

The San Jose Mercury states that the rumors which went the rounds last week concerning the closing of the canneries in that city on account of the war were groundless and that canners expect to continue with the pack as before.

Imperial Cotton.

The first picking of cotton in the Imperial valley is averaging from one-third to a half bale per acre, and the acreage is said to be larger than ever before. The cotton acreage carried over from last year is large, and for that reason the amounts of early pickings have been larger than usual. Labor for cotton picking is said to be scarce.

Citrus Notes.

A new lemon parasite and oak tree fungus were topics discussed by Prof. H. S. Fawcett, of Riverside, at Santa Barbara last week, at which time some 50 growers watched experiments with the parasite, which are said to have appeared in the groves in that section in large numbers. Cutting away the affected parts and treating the soil were advised as remedies for the fungus.

A new general ordinance is to be drafted in Tulare county by Horticultural Commissioner Collins, to provide for the prevention and elimination of insect pests. While there has been little dissatisfaction encountered among the growers with the present ordinance, the refusal on the part of some growers to take immediate steps toward ridding their groves of the gray scale is said to be the reason for the drafting of the new ordinance.

Olive Growers Organize.

An olive growers' association has been incorporated at Lindsay, Tulare county, and two and one-half acres of land purchased, upon which the association is planning to build a factory. The growers plan in this way to do their own marketing and overcome the wide variance in prices which have been noted in past years.

With Grape Men.

James Madison, president of the California Grape Growers' Association, has issued a statement in which he says that rumors that have been circulated to the effect that the sugar test of grapes shipped by that Association will be discontinued is not true. On the contrary, he says, all grapes shipped will be graded in this way for the entire season in order to prevent unripe fruit from appearing on the Eastern markets.

A wine-grape buyer was in Lodi last week offering $12 a ton for wine grapes. He stated that he would contract for 2,000 tons at that price. Tokay buyers are offering $25 a ton for August deliveries, $18 for deliveries between September 1 and 10, and from $15 to $18 a ton, according to quality, the balance of the season.

Over 20 cars of Malagas were leaving Dinuba daily last week, according to advices from that place.

Seedless Muscatels have been advanced in price a half a cent a pound by the California Associated Raisin Co., during the past week, on account of the present war in Europe, which has created a heavy demand for all seedless varieties in this country.

Since the reduction of raisin prices for August and September deliveries, orders for all kinds of raisins have increased to a considerable extent, and it is now thought that 20,000 tons will be shipped from the State during the next two months.

The first car of Thompson Seedless grapes left Modesto last Wednesday. There seems to be a good crop of fine grapes. Malaga shipments will soon commence.

F. B. McKevitt tested some of his Tokays at Vacaville this week and found them 17¼% sugar. "But that's too sour," he says. "They don't sweeten a bit after they are picked."

Tulare county table grapes are a fine crop of fine fruit.

Stanislaus county prides herself on the absence of phylloxera which is troubling her neighboring counties.

CLASSIFIED ADVERTISEMENTS.

Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

LAND FOR SALE.

VICTORIA, AUSTRALIA WANTS SETTLERS
Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

A GOOD RANCH—The Ansel Litchfield ranch, at San Joaquin river bridge, is offered for sale by his administrator; Southern and Western Pacific pass through the property; no better farming land in the valley; produces well without irrigation; abundant water on property; adapted to fruit or alfalfa; 337.11 acres; price $33,711; this property is worth much more than the price asked. C. B. Younger, Santa Cruz, Cal.

FOR SALE—130 acres, well improved land, 40 acres peaches, 5 acres grapes, 17 acres almonds, good house and barns. Finest climate and best drinking water in county, also a 5250 gal. water tank. Located 2¼ miles south of Burson, Calaveras county, Cal. Address H. Pennington, Burson, Cal., Owner.

320-acre well-improved farm will be sold cheap if sold at once. 640-acre stock and dairy ranch, well improved and well watered. Will sell 50 head of cows and young stock with or without the ranch. For particulars write C. P. Gould, Box 27, Parkfield, Monterey county, Cal.

FOR SALE—67-acre ranch one mile from Durham, 20 acres in 5-year-old almonds, 10 acres in 5-year-old English walnuts, 10 acres in 3-year-old Mission olives; balance in alfalfa and grounds. Plenty of water to irrigate same. Address the owners, COOLEY BROS., Durham, Cal.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg., San Francisco.

WANTED.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Working foreman for hay and stock ranch; must understand general farming. Experienced up-to-date man needed. References required. Address Box 297, Yreka, Cal.

WANTED—A capable man for ranch foreman; must understand general ranch work. R. D. 2, Box 70B, Modesto, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

COLLIE PUP WANTED—Male; state age, color and price. J. J. YOUNG, 420 Market St., San Francisco.

WANTED—Dairyman to run large dairy on shares. Box 124, Pacific Rural Press.

TREES AND NURSERY STOCK.

BURBANK'S SPINELESS CACTUS—Proven varieties with cultural instructions that will insure success. I have 100 tons per acre on slabs planted last August. Correspondence invited. J. A. POWELL, So. Dos Palos.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

FOR SALE OR EXCHANGE.

FOR SALE—Gas Tractor, 4 cylinder, 7½ inch diameter, 8 inch stroke. Will do the work of 32 horses. Good as new. Address C. H. Jensen, 502 E. Weber ave., Stockton, Cal.

Alfalfa or Barley Hay of excellent quality, either 1913 or 1914 crop. Will exchange for hogs or dairy cows. Address William Rasmussen, Esparto, Cal.

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REBUILT GAS ENGINES sold for 50% of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

COLLIE DOGS of choicest breeding. Ideal for show bench or farm. Fine companions. Puppies 3 and 7 months old. Also grown stock. Prices reasonable. BROWNDALE KENNELS, Redwood City, Cal.

IN THE FALL MONTHS every farmer requires manure, lime and fertilizers. Now is the time to figure on your wants. Address, for information, Box 10, Rural Press.

"SMITH'S PAY THE FREIGHT." To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

WANTED—A carload of stock hogs. W. E. RAWLINGS, Edenvale, Cal.

BEES.

It pays to keep bees on the farm; raise your own honey, make considerable profit besides. We can supply gentle Italian bees at $3.50 for five-frame colony, $5 for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. SPENCER APIARIES CO., Box 12, Nordhoff, Cal.

800 ACRES FOR RENT

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A No. 1 LAND, suitable for raising seeds, gardening, etc.

Will rent as a whole or in subdivisions. CASH RENT.

For further particulars see or write
J. F. DUNNE or W. J. OSTRANDER,
Gilroy, Cal.

Largely due to the efforts of A. L. Rutherford, county horticultural commissioner, a county ordinance has been passed prohibiting the importation of rooted vines of any kind, resistant or non-resistant. The ordinance is being vigorously enforced with the co-operation of all common carriers and even the postoffice.

Thompson Seedless grapes are reported to be an extra good crop in the Yuba City and Gridley sections this year and shipments are expected to be larger than for many years past.

General Farm Crops.

Hop dealers in the Sacramento valley are awaiting the developments of the coming month before starting any active buying, on account of the uncertain crop production and demand of foreign countries now at war. The total crop in the United States is now estimated at 260,000 to 270,000 bales, of which California will probably produce about 100,000 bales.

Bean growers in the Mormon basin, near Arbuckle, Colusa county, report that the red spider is making inroads on this year's crop and that they will be damaged considerably, with the exception of the blackeye variety, which is nearly ripe. It is said that sulphur spraying earlier in the season would have prevented the present trouble.

It is thought that the increase in the price of sugar since the starting of the European war will result in an increased acreage of sugar beets next year. The acreage this year is considerably smaller than that of last year on account of the lowering of the tariff.

A report from Gridley says that the Gridley rice crop this year will be ready for harvesting fully a month ahead of last year's crop and will be increased from a few hundred acres to nearly 10,000 acres. Growers this year will be equipped with the proper machinery to handle the crop quickly and efficiently.

Grain is not coming into Port Costa so heavily as before, but the warehouses are still full and trainloads stand on the tracks. A German steamer finished loading last week and an English steamer was loaded this week.

RANCID ALMONDS.

To the Editor: The writer would be very much interested to have you publish an article on the best method of curing almonds, walnuts, hickory nuts and pecans to keep them from becoming rancid.

It has been stated that nuts will keep for several years if left in the shell—that is to say, if the nuts are not cracked or opened in any way.

The candy makers and dealers, as well as consumers are very much interested in the problem of keeping nuts from becoming rancid.

I would like to get the information how to cure the nuts mentioned in the very best manner, after they have been harvested. I would also like to have information how to keep shelled nuts, if there is any preparation known whatever, say sulfur treatment or any other treatment that could be applied.

The writer has noticed that most of the nuts in the market, in the smaller stores at least, are always rancid, although they show no appearance of having been opened in any way.—P. M. P., San Francisco.

The shells of almonds marketed in the shell are treated with the fumes of sulfur to make them bright, according to trade custom and demand. Almonds intended for shelling are not treated with sulfur, since the object of doing so is to brighten the shell only, and almond meats in their original condition should keep indefinitely, especially so if placed in a cool dry place.

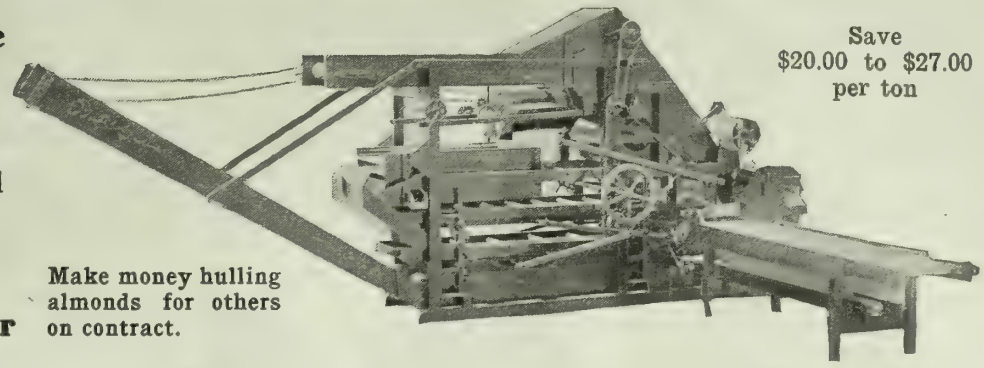
Prior to our organization, individual growers did their own bleaching, or sulfuring, with the result that almonds were not uniform in color, and many were placed on the market in an over-sulfured condition. Our Exchange has very largely eliminated that by the establishment of community steam bleaching plants, with competent men in charge. We believe it would be better for all concerned, however, if the consumer would accept the almonds in the shell in their original condition.—T. C. TUCKER, Manager California Almond Growers' Exchange.

[The trouble with rancid almonds is likely to be too much sulfur applied at the wrong time. If they are sulfured before the kernels are dry, the fumes penetrate and spoil them. Kernels should be dry enough to break without bending before the sulfur is applied.—EDITOR.]

$5.00 Per Ton — ALMOND HULLING — $5.00 Per Ton

YOU STILL HAVE TIME to reduce cost of hulling this season's almonds.

To Make Bigger Profits you need **The Read Almond Huller and Separator**



Save $20.00 to $27.00 per ton

Make money hulling almonds for others on contract.

You must act at once. Advise us in your first letter how many tons you will have. Definite information as to size necessary will be furnished immediately.

WE HAVE A FEW SLIGHTLY USED MACHINES IN GOOD CONDITION ON HAND ON WHICH WE CAN QUOTE YOU ATTRACTIVE PRICES.

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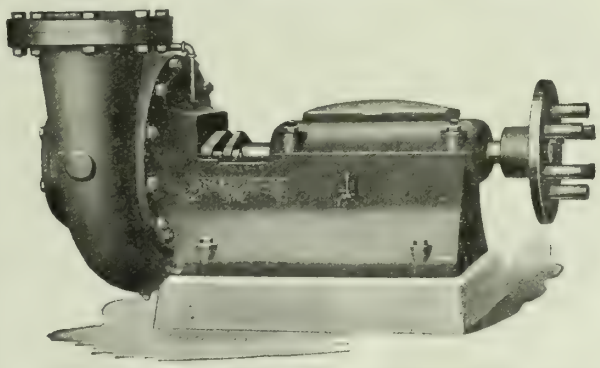

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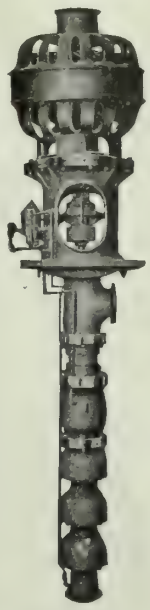

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Our motor driven pumps are absolutely noiseless and have neither valves, rods, nor gears to get out of order.

Write for our latest bulletin describing these pumps and also tables on hydraulics.

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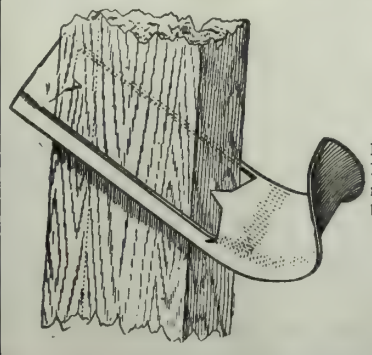
Light Weight CUSHMAN Gasoline Engine for all purposes. The 4-cycle, 4-H.P. only weighs 190 lbs. This is a no-trouble engine. Made in sizes from 4 to 25 H.P. Write for Catalog. Thomas R. Browne, Stockton, Cal.



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Sample and prices sent upon request.

Manufactured by the

PARKER MACHINE WORKS

Riverside, California.

Simplified Dairy Records.

[Written for the PACIFIC RURAL PRESS]

Any form of record keeping or bookkeeping on the average dairy farm must be comparatively simple as the average dairyman contends that he does not have time to attend to such matters, after working hard at other work all day.

It is on this account that we find so many dairies where no records whatever are kept, although such records are absolutely essential if the dairy is to be conducted in a businesslike manner.

A simple way of keeping the records of individual cows was recently seen on a large dairy, where most of the records are made and kept behind each cow in the milking barn.

The system as seem is to have a pasteboard card, about five inches wide and seven inches long, upon which is printed the following headings:

String No.—; Stall No.—; Cow No.—; In, fresh..... 191—; Cut, dry..... 191—; Served ..... 191—; By bull No.....

Below this a heading "Weight of Milk," the card being divided below this heading under the headings. "Date" and "Pounds."

In such a large dairy it is necessary to have the string, stall and cow number on the card, in order to identify each animal, although in a small dairy this would not perhaps be necessary. In this case each cow is numbered on her hip, so that she may be easily identified.

When a fresh cow comes into the string, her number is marked down on the card and she is given a string number and stall number. The date of her freshening is set down opposite the heading "In Fresh." When she is bred, the date is put down opposite the heading "Served." The number of the bull which she was bred to, is put opposite the heading "By Bull No." in order that the owner may know the breeding of all calves.

When the cow is dried up, the date of doing so is put opposite the heading, "Out Dry."

Once every month the milk from each cow is weighed and on such dates the bottom space is filled out, showing the date of weighing and the weight of that day's milking.

These cards afford space for the marking down of the monthly weights for an entire year, and are later filed away and used for future reference.

The advantage of this system, over many others, is that each cow's record is always accessable and the work of keeping them is much simplified.

Where the dairyman runs monthly tests for butterfat, a column should be added with the heading, "Test," and in this column the monthly test should be marked down opposite the amount of each month's weighing. By multiplying the fat test by the number of pounds of milk, and then multiplying this amount by the number of days in the month, a fairly accurate monthly fat production may be arrived at.

Quality Berkshires

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

Oak Grove Dairy Farm

Woodland, California

RAPID STEAMING OF MILK VESSELS.

[Written for the PACIFIC RURAL PRESS]

With the continued low price of butterfat, dairymen are finding it necessary to increase efficiency without decreasing quality. In doing this labor is the big item and anything that is a labor saver naturally meets with approval.

A novel way of cutting down a part of the ordinary labor in sterilizing milk cans, pails, or other vessels, is in use on a large city dairy where this work accounts to considerable in a month's time.

This has been accomplished by building a shelf in tne washing room, 14 feet long of 2x4 lumber. Three pieces are used in making this shelf, two of which are set edgewise, separated by one set broadside up. A space about one inch wide is left between these boards, which allows the water to drain off the shelf, and the tops of them are covered with narrow strips of band iron, to keep the lumber from becoming badly splintered.

A steam pipe runs direct from the boiler, the full length of this shelf, half inch pipes running up from this feed pipe every 12 inches.

This enables the man who does the washing to set 12 vessels at one time on the shelf and by turning a valve, which was placed between the boiler and the shelf, the steam may be turned into all the small pipes at one time, and in this way no more time is consumed in sterilizing the 12 vessels than would ordinarily be required for one.

The same plan could be worked out on a smaller basis, for the smaller dairyman by reducing the number of jets, and the length of the shelf.

KEEPING THE WOODEN FLOOR SANITARY.

[Written for the PACIFIC RURAL PRESS.]

Although most dairymen are now using cement floors in their barns, there are many instances where wooden ones are still in use, especially in the older dairy sections of the State where the buildings were erected many years ago.

The owners of the Millbrae dairy, in San Mateo county, believe that the wooden floor is preferable to the cement floor and it is on account of their floors not being so slippery as concrete that they have continued to use them.

In keeping these floors from being slippery, however, they take precautionary methods, first by having the milkers thoroughly clean the floor twice a day, with brooms and water. After cleaning in this way the floor is covered with gypsum.

This gypsum answers the double purpose of keeping the floor from being slippery and also of purifying the air in the barns, which aids in keeping down the large number of flies commonly found around the milking barns.

We were informed that flooring made of 2x12 inch lumber cared for in this way, usually lasts 12 or 14 years.

Gypsum used on floors of horse barns or floors of other buildings where stock is kept should greatly aid in making sanitation possible, and in view of its cheapness should be more generally used by all farmers.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder. "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

REGISTERED POLAND-CHINA HOGS —Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS — No better anywhere. Boars, sows, and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

FOR SALE—Young Berkshire sows and boars from registered stock. Brae Bourne Ranch, Route 3, Box 69, Santa Rosa, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

POLAND - CHINAS—Fifteen head 11 months gilts, open or bred, of prolific kind. Geo. V. Beckman, Lodi, Cal.

BERKSHIRES—Utility and choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompsan, Novato, Cal.

YOUNG REGISTERED BERKSHIRES —Boars and sows. Reasonable prices. Enterprise Farm, F. C. Cuthill, Newark, Cal.

POLAND-CHINAS. Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

FULLBLOOD ESSEX PIGS—The only herd in the State. Order early. L. W. Millsap, Yolo, Cal.

REGISTERED POLAND-CHINA SWINE —Prize winners, finest stock in State. $30 p. M. Bassett, Hanford.

DUROCS from first-prize winners State Fair, $15.00 up. Ed E. Johnson, Turlock, Cal.

MULEFOOT HOGS are best by any test. Jno. Dunlap, Box 416, Williamsport, Ohio.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE —Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

DUROC-JERSEY BOARS — Weanlings. Lindquist Bros., Turlock, Cal.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B Cunningham, Mills, Cal.

PURE-BRED DUROC-JERSEY PIGS. E. CURTIS, Napa, Cal.

POLAND-CHINA HOGS — C. A. Stowe, Stockton, Cal.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

SHIRE HORSES—Stallions, mares and colts of the best breeding, both imported and home-bred, for sale at reasonable prices. Henry Wheatly, Salvador Stock Farm, Napa.

HEADQUARTERS FOR MULES, broke or unbroke. Mt. Diablo Park. Phone Danville 121, or Kearny 3670, San Francisco.

FOR SALE—Span large young mules; also few young horses; cheap for cash. T. A. McCune, Blacks Station, Yolo County.

DAIRY CATTLE.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warder herd bulls, both sired by $17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars, J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS — Registered exclusively, Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Short-Horns. Prices on application. Hopland, Cal.

REG. HOLSTEINS—Bull calves, Juliana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS — A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE — Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE. McAlister & Son, Chino, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS — Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Shorthorns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa.—Registered Berkshire hogs and Jersey cattle.

Veterinary Questions.

[Answered by Dr. E. C. Creely, San Francisco Veterinary College.]

To the Editor: I should like to have you answer through the columns of your paper the cure for white scours in calves.—M. R., Hydesville.

White scours in calves is now treated by applying treatment to the cause viz., an infection at the navel (umbilicus); treatment consists in the application of iodine, lysol and alcohol equal parts and give internally a dose of castor oil.

MAY BE TUBERCULOSIS.

To the Editor: I have a cow which freshened about six weeks ago. Had a fine healthy calf and gave 5 gallons of milk daily. About two weeks ago she became sick. She was in good condition until sick and then she would not eat, and gave no milk for about a week. I gave her two doses of Epsom salts, one-half pound to each dose, two days apart. She seemed better about the fourth day. Her milk has returned some. She is growing very thin. I have good alfalfa pasture, also dried hay and plenty of artesian water. I notice today she is coughing some. I should like to know the cause.—Constant Reader, Angiola.

I would test this cow for tuberculosis. Give the following powder: Chlorate of potash, 4 oz.; acetanilide, 2 oz.; pulv. belladonna leaves, 1 oz.; pulv. licorice root, 4 oz. Mix and give tablespoonful three times daily.

FOUNDERED HEIFER.

To the Editor: I have a heifer calf, 7 months old, that has been running on alfalfa pasture. About 3 weeks ago she became very stiff in front shoulders; could hardly walk around; would lie down almost all the time; appetite was good all the while for food and water. Other conditions were normal. This heifer is almost if not entirely well. At present have a yearling heifer down under the same conditions. This heifer has been kept in dry yard with the milk cows and fed choice alfalfa and oat hay. Would like your advice as to what the trouble is and what to do for them. Is the disease contagious?—E. E. P., Ceres.

This is a case of founder. I would advise a change of diet.

CATTLE BLOAT AND ITCHING SKIN.

To the Editor: I have a mare that has been troubled with itching of the skin, as described some time ago in your valuable paper by another subscriber, for which Dr. E. J. Creely prescribed Fowler's solution of arsenic, 1 ounce daily. I have been giving this mare 1 pint and 4 ounces to date. I give a tablespoonful morning and evening, making two tablespoonfuls daily, in a little bran mash. The mare is somewhat better, but not cured, as she still itches and those little postules are still coming through. Skin and hair come off, and a little fluid runs out of same, but is getting better all the time. I would like to know if it is dangerous to give too much or too long of this Fowler solution of arsenic. Must I keep right on giving it as I have been doing, or is a change necessary?

A gentleman gave me a recipe for bloat in cattle. He said it was infallible, so I give it here, although I have never tried it:

Take a fat piece of pork; cut into it a few times with a sharp knife, then get some powdered saltpeter. Put into or onto fat pork. Give to bloated animal and it will cure at once. I wish some one would try it out, it seems so simple. He said he used it lots of times and it cured every time.

Another receipt for bloat is to take two tablespoonfuls of turpentine; put into bottle of warm water; drench the bloated cow with it, and in a few minutes she will be all right.—W. S., Healdsburg.

We treat animals exactly as we treat the human being. Whenever you rereceive recipes similar to the fat pork one, consider whether or not you would like to be treated in a similar manner if you had a little wind in the stomach. I am afraid you would dismiss the doctor very quickly. You will find the turpentine very efficacious for bloat, only increase the amount three times.

There is no danger in giving the arsenic if given according to directions. Use the following externally in conjunction: Olive oil, 16 oz.; spirits camphor, 2 oz.; Pearson's Creoline, 1 oz.; kerosene, 3 oz.; oil cedar, 3 oz. Mix and apply to itchy spots once daily, after washing with sheep dip. Whitewash stall very often, and scrub harness.

FOXTAIL INJURIES.

To the Editor: I have two purebred Poland-China pigs, ten weeks old. The eyes of both of them are swollen and sores around them. Four weeks ago one of the pigs got a foxtail in one eye and I pulled it out. I cannot see any now, and it is not likely that they both could get foxtails in both eyes. A remedy would be much appreciated.—V. N., ...?

Some of the foxtail remains. Remove the cause and bathe several times daily with boric acid solution.

TO PREVENT COW SUCKING HERSELF.

To the Editor: Will you give me a plan of preventing cows from sucking themselves?—G. P., Merced.

[Fit a girth around her body, close to her shoulders, having a ring suspended under her belly. Take a strong but light stick and fasten a snap onto each end. Snap one end of this stick into the ring on the girth and run the stick through her forelegs, snapping the other end into the halter ring. In this way she will have freedom of head to eat, etc., but cannot get to the udder.—Editor.]

STATE FAIR PREMIUM LISTS READY.

Word has just been received from Chas. W. Paine, secretary of the State Board of Agriculture, at Sacramento, that particular interest is being shown by farmers and breeders of livestock in the coming State Fair,

The premium list which is now ready for distribution, shows that premiums to the extent of $40,000 will be awarded to breeders of livestock, which is several thousand dollars more than that of previous years.

Among the special features to be held during the week is the horse show which will include many saddle horse events, and provide entertainment for evening visitors.

7 SHORT HORN BULLS

Registered Ready for Service

REGISTERED BERKSHIRE SWINE

13 gilts and 14 boar pigs from 3 to 10 months old.

HOPLAND STOCK FARM.

Hopland, California.

Hillcrest Stock Farm

THORNTON S. GLIDE, Prop., DAVIS, CAL.

"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

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Short-Horn Cattle, Shropshire and Merino Sheep

Offers for Season of 1914 an exceptionally fine lot of Purebred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.

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Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

CHOICE CHEAP CONCENTRATED

MODESTO ALFALFA MEAL

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CATTLE POULTRY SWINE

For Prices See or Write

THE GRANGE CO., Modesto, Cal.

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Shire Stallions and Mares, both imported and home bred, of the best breeding, for sale. Inspection invited. For particulars apply

Address HARRY CLARK, Burlingame, Cal., or
DR. J. B. DALZIEL, 530 Fulton St., San Francisco, Cal.

SILOING THE CORN CROP.

(*Continued From Page 145.*)

The capacity of a machine is dependent upon the length the silage is cut, the above figures being based on a ¾-inch cut which is the one most generally used. Smaller lengths are preferred by some, as more of such silage can be stored in a silo, but where such practice is used the capacity of the cutter is reduced.

Although most farmers use gasoline engines for power, an electric motor may also be used where more convenient.

As above stated, the larger cutter and engine have been found more economical to use, yet the first cost of such equipment together with the cost of a corn binder oftentimes makes a total prohibitive cost when purchased individually. This is overcome in sections where there are several silo owners, by owning the machinery jointly. Another good feature of this system is that labor may be exchanged in the harvesting and filling work.

Before the filling is started, the owner should make a careful inspection of the silo from the inside, to see that there are no cracks or other openings through which air can enter. In wooden silos when such openings are found a good way is to fill them with a handful of soft clay.

The number of men required at filling time, depends largely upon the amount put up daily and upon the distance the corn has to be hauled from the field.

Where the work is to be finished up in a short time and where the corn is cut with a binder, one man is needed on the binder, two men in the field to load the wagon, one man for each team hauling, one man to feed the cutter, one man to tend the engine and relieve the man feeding, and two men inside the silo.

Where the farmer owns his own machinery, this force can be materially decreased as in that case the filling may be done a little at a time. A common way is to send a man into the field in the morning and have him cut enough corn for that day's filling. Later, the owner and one other man may be added to the force, the practice being to use one wagon for hauling and after each load is delivered at the silo, all turning in and running it through the cutter. While this method is of course much slower, it has the advantage of allowing the silage to thoroughly settle and in this manner much more silage can be stored in the silo than where rapid filling is done.

Most silo owners have found that the blower system is the most satisfactory way of elevating the silage, and this also facilitates the distributing inside the silo, as a distributor may be attached to the end of the blow pipe where it enters at the top of the silo and allow the men inside an opportunity of directing the silage where it is most needed.

The most care is of necessity entrusted to the men inside the silo, who do the distributing and tramping, and for that work the owner should choose good reliable and conscientious men. While their work is not hard, in fact many only have one man inside, it depends upon them how well the silage is made.

The common way of doing this work is to direct the spout around the outside walls, until that part of the floor is two to four feet higher than the center. All of the time this is being done the men should be tramping the silage down securely next to the wall with their feet. After building the sides up in this manner the spout may be turned into the center until that is built up to an equal height. The center need not be tramped as it settles of its own accord.

After the filling has been finished, it is a good practice to cover the top with straw and thoroughly wet it down with water, otherwise there will be some loss occasioned on the top, where air penetrates.

PURE-BRED SALES.

[The following sales of pure-bred livestock have been reported since our last issue containing this department.]

POLAND-CHINA SWINE.

W. A. Young, Lodi, sold to Miller & Lux, San Francisco, 6 boars; to A. B. Thomas, Gilroy, two sows and a boar; to W. G. Drew, Turlock, one boar; to J. A. Clark, Lodi, one boar; to A. Blake, St. Helena, one sow; to B. E. Troyer, Turlock, 4 sows and a boar; to John Montgomery, Lockeford, one bred sow and one boar; to Fred Setzer, Lodi, one bred sow; to J. F. Rowe, Lathrop, one boar; to P. A. Bryant, Stockton, one boar; and to Harry Sigelhoff, Lodi, one boar.

BERKSHIRE SWINE.

Brae Bourne Ranch, Santa Rosa, sold to George R. Gage, Santa Rosa, one bred gilt.

C. H. Thompson, Novato, sold to George M. Smith, Hollister, one young boar; to Hawaiian University Agricultural College, Honolulu, one boar; to D. D. McIsaacs, Tocaloma, one boar.

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL

For the Human Body—It is penetrating, soothing and healing, and for all Old Sores, Bruises or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

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A Perfectly Safe and Reliable Remedy for
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Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

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Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.
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BREEDERS AND IMPORTERS OF SHORT-HORN CATTLE.
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COMPLETE DISPERSAL SALE.

Wm. Bond's Herds of REGISTERED SHORT-HORN CATTLE and PERCHERON HORSES to be Auctioned One Day Only

THURSDAY, AUGUST 27.

ABSOLUTELY NOTHING RESERVED.

Here is a chance to get good sound registered Percheron mares in foal to Imp. Inquiet 79239 or the pick of a fine lot of registered stallions, many of them State Fair winners.

My herd of registered Shorthorn cattle contains much of the blood that has made Shorthorn history and includes such animals as Dora D. D. 3rd and Clover Leaf 4th, sired by King Edward, Greenwood Mary by Hillcrest Hero, and Maid of Gloster by Brampton Victor, etc.

Everything goes—cows, heifers, bull calves and suckling calves. An excellent chance to get foundation stock.

CATALOG NOW READY.

WM. BOND, Newark, Cal. Ranch at Mowry Station.

HOLSTEIN-FRIESIAN BULLS

Having sold three of our dairies we are offering for sale at a sacrifice

5 REGISTERED SERVICE BULLS and 4 REGISTERED BULL CALVES

Prices on Application.

MILLER & LUX, INC., Dos Palos, Cal.
Colony Farm Dairy

50 COWS AVERAGE 717 POUNDS BUTTER.

This is the average of the 50 cows that have completed yearly semi-official tests to date, in our herd, and only 15 at mature age.

Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.

INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as $150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention.

A. W. MORRIS & SONS CORPORATION.
Holstein-Friesian Cattle. Woodland, Cal.

Farmers, Attention

WANTED—Location for seven $150,000.00 Condensed Milk Plants and twelve $115,000.00 Milk, Flour and Sugar Plants. We sell no stock or bonds, nor ask for free site. Show us you have natural surroundings to develop into dairy country if milk prices are such to make it possible to do so at a profit. Send full information of your advantages, pictures of farms, publications, books, etc., to

HERMAN R. FRANZEN,
Ephrata, Lancaster Co., Pennsylvania.

With the Livestock Men.

The U. S. Indian Service, with headquarters at San Francisco, is seeking bids from sheep breeders for furnishing 8,000 head of grade ewes and 200 head of pure-bred rams, which are to be used on the Jacarilla reservation in New Mexico.

J. D. Chappell, an Eastern representative of the De Laval Separator Co., was a visitor to this office during the past week. He reports that while here he made arrangements with the Panama-Pacific Exposition directors for a large amount of space, which will be used for demonstrating the dairy machinery manufactured by that company.

Harry Clark, of the Black Hawk Stock Ranch, writes that one of the yearling Shire fillies, which they were fitting for the fair, died during the past week.

It has been definitely decided, by the directors of the Yolo County District Fair Association, that no fair will be held at that place this year, as had been previously planned. It is planned to hold horse races, however, early in September.

Dr. J. B. Bell, secretary of the Hog Raisers' Association of the Imperial Valley, has received a communication from the U. S. Department of Agriculture stating that the Government will send a competent veterinarian to California, in the near future, to work in co-operation with the University of California in eradicating hog cholera, and that he will be pleased to aid in the association's work against cholera.

Practically all of the cattle which have been fattened near Oakdale, Stanislaus county, have now been marketed, according to reports from that place. Probably the last shipment of this stock was five carloads of steers shipped by Rodden Bros. last week.

In a letter to this office, V. A. Peterson, of Blacks, Yolo county, states that he has severed his connection with the firm of Clarssen & Peterson, Holstein cattle breeders, to engage in the raising and selling of alfalfa seed in a large way. As Mr. Peterson has had much experience along this line, his new endeavors should prove profitable.

The Howard Cattle Co. and Pacheco Cattle Co. were both exhibitors of Shorthorn cattle at the agricultural fair held at Salinas last week.

The Board of Health of San Jose has adopted resolutions requiring all dairymen selling milk in that city to take out licenses before being able to sell milk. The new law will go into effect September 8 and will be rigidly enforced.

According to a dispatch from Winters, Yolo county, steps are to be taken by Robert Newcomb, secretary of the Creamery Managers' Association, to build a condensed-milk plant at that place. Dairying in that section will, it is thought, increase considerably, especially if such a plant is built.

After listening to an interesting talk made by H. A. Jastro, president of the National Livestock Association, a temporary organization of the Monterey county stockmen was performed at Salinas last week, Henry Lynch being elected chairman and J. E. Breen secretary.

The report of Frank Griffith, livestock inspector of Kings county, for July, shows that livestock is practically free from disease. Some blackleg prevailed, but prompt vaccination stopped the spread of the disease. Feed is plenty and sanitary conditions prevail throughout the county.

Dr. J. B. Dalziel, of San Francisco, has just returned from Betteravia, Santa Barbara county, where he did the veterinary work on the 400 head of horses owned by the American Beet Sugar Company.

In the belief that the present worldwide war will greatly increase the prices of mules and horses in this country, buyers are said to have been in Butte county during the past week in the search of such stock. Sales of mules at $250 a head are reported to have been made in Oroville last week. Reports from Canada state that England has called upon Canada for 30,000 head of horses, for immediate delivery. These will be mostly for cavalry and artillery purposes.

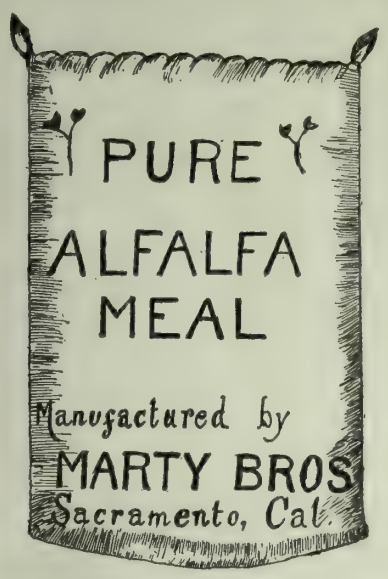
The Hanford city milk inspector reports in his monthly statement the inspection of three dairies selling milk in that city and also their tests.

About 85 cars of cattle were marketed at the Portland Union Stock Yards last week, prices holding up well. Prime light steers sold for $7.50; top cows for $6 to $6.25; bulls, $4 to $4.75; top light veal calves at $8.25. Hog prices fluctuated considerably as all other markets have done during the past week, but the market was strong at the close, with best light hogs going at $9. Receipts of sheep and lambs was only moderate for the week, prime wethers bringing $4.50 to $4.75; prime ewes $3.85 to $4; medium ewes, $3.25 to $3.75; and spring lambs, $5.50 to $6.

Since the starting of the Madera co-operative creamery at Madera, a number of alfalfa growers of Fairmead Colony have purchased cows and started in the dairy business.

Sheep shearing started last week in Sutter county, and it is thought that by the end of this week shearing will be in full blast. The sheep in that section are said to be in the best of condition and the wool is of excellent quality.

A fire which swept through Pacheco pass, San Benito county, last week, caught a good many beef cattle, which were burned before owners had time to rescue them.



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In 1909, its first year, sold 200
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In 1911, its third year, sold 665
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IN MARCH 1914, SOLD OVER 1000

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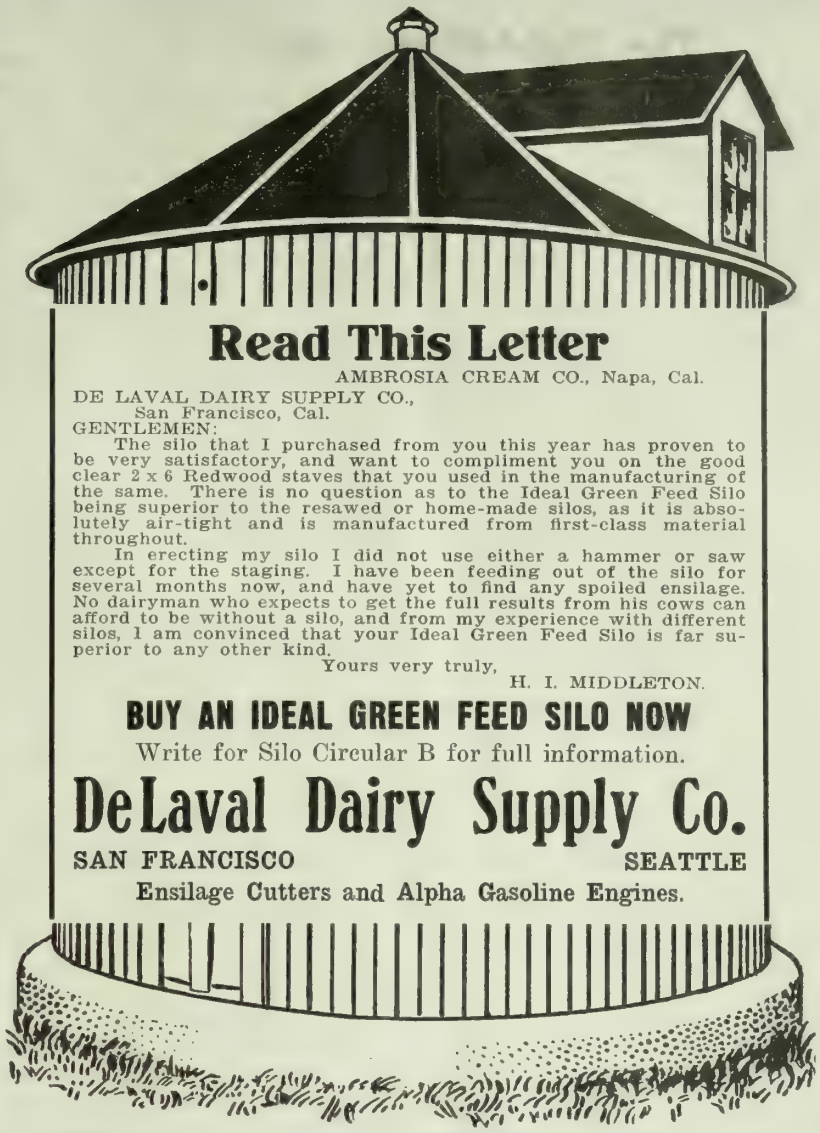

Read This Letter

AMBROSIA CREAM CO., Napa, Cal.

DE LAVAL DAIRY SUPPLY CO.,
San Francisco, Cal.

GENTLEMEN:

The silo that I purchased from you this year has proven to be very satisfactory, and want to compliment you on the good clear 2 x 6 Redwood staves that you used in the manufacturing of the same. There is no question as to the Ideal Green Feed Silo being superior to the resawed or home-made silos, as it is absolutely air-tight and is manufactured from first-class material throughout.

In erecting my silo I did not use either a hammer or saw except for the staging. I have been feeding out of the silo for several months now, and have yet to find any spoiled ensilage. No dairyman who expects to get the full results from his cows can afford to be without a silo, and from my experience with different silos, I am convinced that your Ideal Green Feed Silo is far superior to any other kind.

Yours very truly,
H. I. MIDDLETON.

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Write for Silo Circular B for full information.

DeLaval Dairy Supply Co.

SAN FRANCISCO SEATTLE

Ensilage Cutters and Alpha Gasoline Engines.

Dairy Cows For Sale

90 Head Mixed Durham and Holstein Dairy Cows, and 30 Head of High Grade Heifers

ADDRESS

JAS. CAPLES, Jr.,
ELK GROVE, CAL.

The Eight-Hour Law.

To the Editor: The discussion in the columns of the RURAL PRESS of this somewhat absorbing topic is most interesting. At the outset, I would say I am strongly opposed to it, as applied to the farm, and also as applied to anyone who wants to work longer.

It seems to me such an absolutely topsy-turvy condition of things when, after generations of preaching industry and thrift, the glorifications of labor, and the declared inalienable right of everyone to pursue happiness, we should pass laws contrary to all this.

A boy at the wood pile, or a girl washing dishes may sigh for the day when he or she need do nothing. But what an illusion! What a fallacy! We soon get to know that in work alone is happiness.

Why is it we are forced to employ any kind of foreign labor we can get? Simply because the rising generation is already becoming spoilt. The young men, whose fathers used to take a pride in their work, are always looking for a "soft job"; or hanging around for a job on the highway at big wages. It is idleness that breeds discontent and unhappiness. The other class of American farm labor is the "hobo," mostly the victim of his own folly.

Shorter hours would only make bad conditions worse.

I am amazed when I read all the literature, classic, much of it, glorying in labor, and its fruits, and ponder the precepts sought to be instilled into the youth by means of the Public Schools, to find any thinking people ready, not only to disprove of all this, but to seek to legislate against it!

A correspondent in the RURAL PRESS of August 1 says an 8-hour law would give the farmer time to assert his independence and enjoy the society of his wife and family a little each day. A very pretty picture; but may I paint another?

A hot day in August; peaches and prunes all ripening at once, and falling to the ground. By the noon mail a reminder from the bank that a note was now overdue; a child is sick upstairs with heavy doctors' bill to pay soon. But the fruit must spoil: the law won't allow the help to work any longer than eight hours.

Or another: a long rainy season in the winter: land too wet to plow or even to permit of pruning. The farmer and his sons loafing about the house, only adding the women's work by tramping mud into the rooms. The hired men have cleaned all the harness and finished up every odd job. The farmer feels he must keep them, although they are not earning their board. In common justice, should the farmer not be "permitted" to have these men make up for lost time?

These illustrations, which are simple enough, merely show the absolute folly of attempting to regulate farm labor by that which is no doubt right in the factory or store.

The question has nothing to do towards adding to the independence of the farmer, but very much the reverse. The very fact that the farmer works long hours or not at all, according to the season of the year and weather conditions, largely constitutes his degree of "independence."

And, I would remind your Lockeford correspondent, the farmer is organizing, but if some day the producer is to deal direct with the consumer, such a radical change could only come about very gradually. If the farmer were today organized as a unit, nothing but chaos could result if he declined the services of the middleman.

The farmers of California, and of the United States as a whole, are not the ignorant class our friend would intimate. By no means. But undoubtedly they need to have more representatives from among themselves to sit in the State Legislatures, as well as in Congress itself. And to do this, the city voters need to be educated as to the real needs of the farmers, instead of permitting a class of discontented people to befog the issue by appealing to a false sentimentality in describing the farmer's lot as a hard one and the laborer as a slave.

LEONARD COATES.

Morganhill.

HOPES FOR SHORT HOURS AND BETTER WORK.

To the Editor: I have read the many articles in your paper about the proposed 8-hour law and its probable effects and would like to express some ideas of mine about it.

I consider this law an expression of the trend of public sentiment and not an attack on farmers and I believe it will result beneficially to the whole people, even as the compensation law is proving out to be a benefit.

It is aimed at or will hit farmers to the extent they exceed eight hours in their work, and only that much. Extreme long hours, 12, 14 and 16, are a part of and on a par with, the practice of shallow-plowing so common on the big grain ranches. The shallow plowing has wasted the fertility and productiveness of our main valleys to a large extent and the long hours have driven the valuable help into other lines of employment, where conditions were more bearable. There is no other line of endeavor so avoided by able men as hired farm help.

In my experience, I find I can do more in piece work in eight hours, than in 10 or 12, and I have tried it out thoroughly in both light and heavy work, as hop-picking for one and tie-making for the other. Men working long hours work easy so they can last. Four hours of rustling will equal eight of loafing. Four hours of active, live, working will make any man or team ready for a meal and rest, and those too slow for this should be culled out.

On the smaller farms where men who own their own places, do their own work, they usually average eight hours or less in the field and will work not over nine for anyone. Ask the farmers around Turlock.

If this law would tend to encourage the subdivision of large holdings, California should welcome it for the change would be of great benefit to the State in increased independent population and prosperity. I think it would be an added inducement to prospective Eastern settlers to learn we could make a living in eight hours.

On the large ranches, this law would make it necessary to have a stable man to feed, carry and harness and unharness stock, but he could pay for himself now in increased efficiency.

If present conditions are so bad on Mr. Wayback's ranch that his help is a menace to the safety of his family is it not high time for him to change, radically, his methods of hiring and of treating hired help?

In mines, such work is accomplished by adding shifts, this having been proved to be the most efficient way. If good for miners, why is it not good for farmers?

If California farmers will begin to insist more on the quality of work and less on quantity of time put in, they will be able to get a better grade of help. They will not get better men until they shorten the hours and treat help as men should be treated. There is no use trying to mince matters, for the big ranchers "are 'n bad" with the workers of this State on account of former treatment, and a change is needed. I think a great many of these ranchers are realizing this and have made some improvements already.

ROBERT M. MCCANDLERS.

Pescadero.

[Your argument is interesting and calmly presented as an argument should be. The defects in it are that the assumptions upon which it is based lack demonstration. First there is no basis for the claim that shorter hours will make better farm workmen because there is no place in the world where an 8-hour schedule prevails. It takes something more than the turn of the clock to make a man worth having: in fact very many of the California farm employers were formerly farm workmen and they succeeded in spite of the clock because they had something else in them and not because their employers were good or bad. Again you argue that it is the farmers duty to make men good and you propose to try an experiment at his expense. You have no right to place that burden on his business.—EDITOR.]

CONDUCTORS OPPOSE 8-HOUR AMENDMENT.

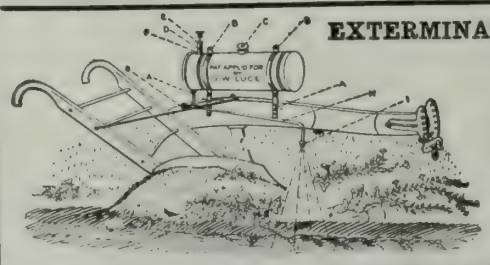
The following letter to the Farmers' Protective League from the chairman of the Order of Railway Conductors' California legislative board shows that the proposed 8-hour amendment is not a union labor proposition:

"Your favor of the 21st inst. received, and in reply to same can say we have taken up the Universal Eight Hour Law for consideration, as well as many other measures, and are strongly opposed to it, as we believe it will be detrimental not only to Railway Men, but also to a large majority of all laboring men.

"Thanking you for your interest taken to defeat this measure, and hoping same will be defeated, I am

"Yours very truly,

"T. J. APPLEGATE."



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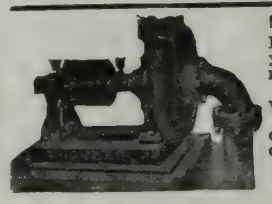

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Mention Rural Press.

Country Vegetables.

PLANT CHILI PEPPERS NEXT YEAR.

[Written for the PACIFIC RURAL PRESS.]

Those who have opportunity to watch the chili pepper crop this fall will very likely plan to raise some of their own next year, especially in southern California where peppers are making money. The troubles in Mexico where large quantities are usually grown, have so reduced the planting, cultivation, harvest, and shipment from that country that they are now exceptionally high priced. The dry reds recently sold at 19c. per pound, and the few green ones ready for the vegetable market brought 5 to 7c. in the fields.

The principal use for green ones is for canning in tins in which they are shipped from Los Angeles to Mexico, Kansas, Chicago, Washington state, and points between. One company is said to be putting out 32,000 cans daily, selling them at once through wholesale agents to the various states and territories.

Allen Bros. who are raising forty acres of the approximately 750 acres in Orange county, estimate the canned crop this year around Los Angeles will be 1000 to 1200 tons, practically all put up by three Los Angeles canneries. This includes the California and Mexican peppers besides the chilis.

The yield has never been less than five tons per acre and has been as high as 15 tons, averaging about nine tons green besides the ones left to ripen. Very many growers contract their crops to the canners early in the season. Allen Bros. contracted theirs at $18 this year.

Green peppers which are not suitable for the canneries or which are missed by the pickers during the short time they are good for canning, are allowed to ripen and are then artificially dried. There is more money in the dried peppers but the returns are not always so prompt. Accordingly, perhaps half of the ranchers do not sell them green but Japanese gardeners do. If all are allowed to ripen, the dried crop is 1500 to 3000 pounds per acre and they sell at 7 to 19c. per pound, averaging about 10c. Often the crop is sold green and less than 500 pounds per acre are dried. A large part of this 500 pounds is that part of the crop which is green when frost kills the plants in November to February. They are dried on trays and sold at ¾c. to be ground up for chicken feed.

When the whole crop is dried they are rung up in a shed over dry or steam heat five to seven days. The old custom of drying them in the sun is not now common because many of the ripe peppers rot before they dry that way. Some of them are ready to pick November 1, and Mr. Allen picked them one season for drying until February 15, which is exceptional.

In the sheltered foothills, they pick green ones all the year around. In the level country about Los Angeles, green peppers are picked for the canneries from about August 15 till frost. Each pepper is suitable for picking only a short time, not over two weeks, and is in best condition just before it begins to turn red. None should be overlooked early in the season, for the more you pick, the more blossoms will come and new ones be set.

Allen Bros. at one time used hotbeds to get their seedling plants, but that involved transplanting. This is too much trouble for the canning and drying crops in which earliness is not so much of an object. They now use a garden drill to put the seed in finely pulverized ground in the fields where they will grow without transplanting. This is usually done in the first half of March. The rows are 3½ to 4 ft. apart and the seed are sown thick enough so that they will leave a good stand when thinned to 20 in. apart at 3 to 6 in. high. The ones thinned out may be transplanted as late as June to places where there are not enough already. But little water is necessary in transplanting and there is but little loss. Considerable dirt may be taken up with the plant, as it is usually moved only a few feet at most.

Shovel cultivators are used after each irrigation on the harder lumpy soils, but harrows are sufficient on the sandy soils. Always bear in mind that peppers have a widespread root system near the surface, and these roots should not be cut. The same thing is to be remembered in ditching for irrigation. Broad flat ditches are right, between low ridges along the rows to keep the water away from the plants.

Allen Bros. have their own centrifugal electric pumping plant furnishing 100 weir inches. All their land is piped along the head of the rows in each field. On the peppers he was irrigating when the writer visited him; there was a concrete "standpipe" with a valve, connected with the irrigation pipe for each four rows. These standpipes were 8 in. diameter and were here level with the surface of the ground, though their greatest usefulness is on ground which, not being level, requires various elevations of the standpipes above the surface or below it.

The hundred inches of water were running into four of these standpipes at once, each of which was supplying four rows. The water flows, through dams across the ends of the rows, by means of 2-in. galvanized pipes 2 ft. long. Some of the rows required more water than others or the water flowed less swiftly through them, so that two and even three pipes were used for them. Ordinarily, one is enough. With such an irrigation system, the water nearly regulates itself and may be left for an hour or two at a time while the irrigator attends to duties at another place.

Irrigation is the most particular need of peppers; they require more than other crops. Allens irrigate 10 to 15 times per season according to the soil. From July 15 when the fruit begins to set, the vines need water about every ten days.

Directly after an irrigation about September 15, burr clover is sown for fertilizer, and a last shallow cultivation is immediately given. The clover is, of course, to keep up the fertility. The Allens have raised peppers three or four years in succession on the same fields; but they usually alternate with lima beans, which also build up fertility.

Prunes are ripening fast around Santa Rosa and growers are busy in their drying yards. The crop there this year is said to be small.

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Rabbits and Poultry.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Rabbits are causing quite a little interest, and several inquiries have come to me for information that can be relied upon as to the enormous profits to be gotten from a few hutches of rabbits. This is a little difficult for me or any other person who is not traveling around a good deal. The reason for this is plain enough to understand as each locality may differ in its demands. The past few months I have been making inquiries and have learned one thing that is pretty general in all localities, and that is, that rabbits have very little if any sale during the summer months. They all tell me the same thing "rabbits sell well in winter but are very shy in summer," and here in Pomona they are so shy that no sales are made at all. All the young that are hatched in summer must be held over and fed. During the fall and winter months sales are readily made at 7c. a pound. Of course the rabbits can be fed on very coarse feed, which is in the owner's favor; but even that mounts up when it has to be bought. One of my neighbors was getting quite a rabbitry; and last winter he got so elated that he said if he had seventy does he could make a living without working for wages, but just recently he sold every rabbit he had, a great many of them for 10c. each. He said if he kept them much longer he would be in the poor house.

Another man on this street says he has not made a sale in four months, except to chicken raisers who buy them to cook for young chickens.

In the face of beef and other kinds of meat being so high, this is hard to understand, except as an old prejudice that has held as long as I remember, "that rabbits were only fit to eat during the winter." Whether the prejudice has any real foundation in fact or not I am not prepared to say because I don't know, and see no reason to dicker about it and pretend to know.

I have been told, that fried rabbit could not be detected from fried chicken, but that's a fable for children, it don't go with those who know better. But rabbit meat is essentially the poor man's meat and if some effort were made to popularize it, I don't see why it should not have a big future.

Rabbits are very prolific, and this coupled with the fact that they require but little room, and the expense to start a rabbitry is so small as compared with other kinds of live stock, tend to make the production overrun the demand. When this occurs the producer always gets the bad end of the deal. But as stated before, I am not well enough acquainted with conditions all over the state to say positively that there is no money in rabbits.

A lady in Oakland who writes for the papers, claims there is, she keeps them and of course sells them, when a customer comes in and I think if any one is making money with rabbits at the present time it is the fanciers who have good stock to sell to breed up with. Like everything else, the best bred stock is the best.

TELLING THE TRUTH.—If breeders would tell the truth about any business I believe it would result in a larger influx of trade for them; we are a cosmopolitan people and have such a great variety of likes and dislikes that eventually the man or woman with the ability to get the best results out of each kind of live stock would get that thing through the law of attraction. But one hears such crude statements made of great things to be done by this thing and that thing. If he can spare the money (and many times when he can't) he rushes right off and gets something that he really has no idea of staying with and working up, because he wants to get rich quick. The get-rich-quick policy is a lure and a snare, it can't be done honestly and the quicker our youth are made to understand that, the better for all concerned. In a small circular received yesterday advertising a colony project, almost independent fortunes may be made on two lots 50 by 150 each. This is to be gotten out of cactus, chickens, and rabbits. But the statement is made that $2 can be made from chickens for every dollar invested; and that rabbits will net $5 for every dollar invested. Now the paper reads so sure that even the most level headed are likely to be taken in and done on such a proposition, as if the thing had been tried out and the writer was the man who had tried it. If this were true, everybody and his uncle would be running to get a few lots and some rabbits.

I don't know much about the work of keeping rabbits, but I do know that if they are neglected they will, like every other animal, get sick from dirt and filth. Everything needs care, and when the care is withheld, they suffer. There is no royal road to wealth either in chickens or rabbits, but a living can be made with poultry, a good living, but it will require good care and management. The man who understands rabbits and knows when to breed for the markets, is likely to make more money than the man who just breeds any time. In the first case the breeder who times his animals will not be feeding a lot of unprofitable youngsters during the summer, he will probably be saving the strength of his breeders for the season when he knows he can sell his product.

There is a great deal in knowing the right time and using it. The man or woman does not live who can tell another just what he can do or can't do; they can only tell what it is possible to do. The doing depends on the man or woman.

To the Poultry Editor: A gobbler two years old has always been healthy until lately he began to be droopy. I gave him a good dose of Epsom salts twice and each time he would appear better for a day or so then he would be droopy again. I feed wheat once in a while and he has a 40-acre range of oats that has not been cut.—J. G., Ripon.

[The gobbler has become surfeited with oats, and very likely is suffering from impacted crop. The Epsom salts gave a little relief by emptying the bowels but it requires more. Give him olive oil in preference to Epsom salts and mucilaginous drinks, such as flax seed boiled and made into a tea. Also take him off the range and confine him to a yard where you can feed soft feeds a few days. If cared for he will be just as good as ever; but if you let him go much longer he will get worse.]

SMALL BIRDS FOR EGGS.—This is the slogan that is going the rounds of the poultry press at present. Is it correct, or will it bear investigating? I believe it will, every once in awhile somebody feels a call to rush into print, something after the fashion of the old preachers, and they make just about as good a job of it. If undersized pullets and hens are to get all the credit, the standard is no standard and the men who made the standards did not know what they were doing. There is no way around it—it is either one thing or the other.

I don't say these people who are

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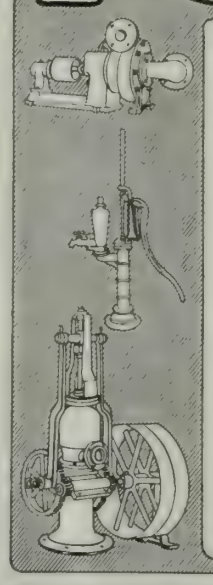

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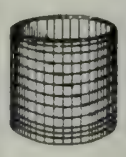

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crying small hens are the best layers are wilfully lying, not at all, but I do say that they are creating a wrong impression. Because the hens, which are in fact only pullets, are under weight this claim is made broadcast. Now nothing but pullets under a certain age are accepted at these egg laying contests. As soon as received they are fed for laying, and being in a new place, given a change of feed and the best of care they commence to lay, and if their owner has chosen right they lay heavily. While they are laying heavily they are certainly not putting on any weight, but rather losing, then they are weighed and found to be under the standard weight. And right away the world of poultrydom is notified that small hens are the best layers. With all due respect to those who make the claim I say it is no sure thing to swear by. Some small hens are good layers and some large hens are mighty good layers too. And I stand ready to prove that if the hen is the right type for a layer it matters not whether she is one pound under the standard weight, over it or just plain it.

Looks like we could find something that would help the poultry raiser along better than troubling about how many pounds we can knock off a hen and then sell her as a standard bred. Or because she is a no account and was not half raised, sell her for extra, on the word of some one saying, "small hens are the best layers."

CALIFORNIA CROP REPORT.

(*Continued From Page 151*)

believe the crop will be much over 75% of a normal one.

According to G. W. Ashley, of the Lodi Table Grape Growers' Association, the Tokay crop this year in that section will exceed that of last year considerably.

C. A. Bernhard, secretary-manager of the Ukiah Farmers' Club, writes that grapes are looking well and that mildew has done little harm. Pear picking in that section is now on, but the crop is 50% or more short of normal. The crop of wheat is not so good as had been expected. Farmers are asking $11 to $13 for baled grain hay f.o.b. at Ukiah, alfalfa being about $2 lower. Hops are late in maturing and will be short. Prunes there are nearly a failure.

Writing from Anderson, George A. Lamiman, horticultural commissioner of Shasta county, says that the crop conditions are about the same as last reported. The pear crop was about all purchased by the canners' association and is now being picked and shipped. A good many of the fruits are infested with codlin moth, making seconds. The peach crop is heavy in most sections, and drying is now under way. In the Happy Valley section most of the fruit is shipped green to the Northern markets. The growers co-operated this season and shipped in car lots, making cheaper transportation. I understand the fruit sold for good prices, as it is of high quality and more was wanted in the market. The prune crop is estimated at 20% of normal and the sizes will be large. Not many cracked fruits are noticed. The fruit will ripen earlier than normal and the quality will be good.

The fruit shipping season in the Placerville section of Eldorado county has commenced fully two weeks earlier than usual, according to J. E. Hassler, who also writes that pears are 70 to 80% of a full crop, with about 50% already shipped; plums, about 80%, with probably 30% yet unshipped; apples, 80%; peaches, 100%, and grapes about 90 per cent.

Gravenstein apples are a full crop in Sonoma county, and probably the cleanest and best quality ever grown there, according to O. E. Bremner, horticultural commissioner of that county, who writes that they ripened at least 10 days earlier than usual. Late apples in that county promise about 75% of a normal crop. Prunes there are spotted and will scarcely exceed one-third of a crop. Fair sizes and early ripening with few splits are reported. He writes that the berry-picking season will probably last two weeks longer, from the time of this issue, both logan and blackberries being as fine a crop as has ever been harvested there.

The Sebastopol Berry Growers, Inc., states that the berry crop there will probably amount to 400 tons, 70% of which has been picked. He also states that Gravenstein apples are about 70% packed, and while growers have found some difficulty in marketing their fruit on account of European shipments being refused, the growers will handle big crops and will do fairly well after all. Pears are an enormous crop, most of them having been sold.

J. E. Bergtholdt, of the Silva-Bergtholdt company at Newcastle, writes that all fruit crops except Salway, Levi and Phillips Cling peaches and grapes are just about harvested, Levi Clings being 75% of a normal crop, which will entail the movement of about 3,000 tons from Placer county; Salway peaches, 70% of a crop, or about 150 carloads; Phillips Cling, 85% of a crop, or not to exceed 400 tons. Midsummer plums have been harvested in that section, averaging about 55% of a crop. A bumper crop of Bartlett pears was harvested and met a good staple market for the season. Grapes there are a full crop, and it is probable that shipments will reach 250 carloads.

In reporting conditions from San Bernardino county, S. A. Pease says that oranges are 75% of a normal crop, lemons 85%, apples 55%, plums 100%, peaches 80%, grapes 80% and walnuts 80%. Returns, he says, are showing that oranges in that county last season averaged better than 80%, although lemons did not yield more than 25%. Lack of spraying is said to have cut down the apple crop in some sections, while late spring snow and frost were factors in the higher sections.

Alameda fruits are reported to be: peaches 70% of a crop, pears 80%, plums 40%, tomatoes 90%, and berries 100%, by Fred Seulberger, horticultural commissioner of Alameda county.

The prune crop in the Santa Clara valley is almost harvested at this time, and the bulk of it is on the trays. Estimates of the crop now being made are about 35% of normal, from 10 to 15% of these being splits, which will materially reduce the tonnage of marketable fruit. According to reliable sources, some packers are paying from $200 to $500 to growers who will release them from contracts made before the starting of the European war.

The raisin crop of the State, as estimated by two prominent growers of Fresno, may run as high as 115,000 tons, and may fall as low as 85,000 tons, depending upon how the berries fill. So far the season has been favorable. The holdover crop amounts to about 20,000 tons, and we understand that the Associated Raisin Co. recently appropriated $100,000 to advertise raisins as a food through the East to stimulate sales.

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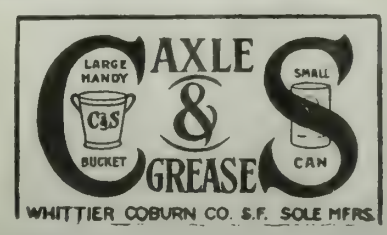


The Home Circle

Most Important Help in the Kitchen.

Mrs. W. H. Lawrence, a lecturer before a University Farmers' Short Course gathering said:

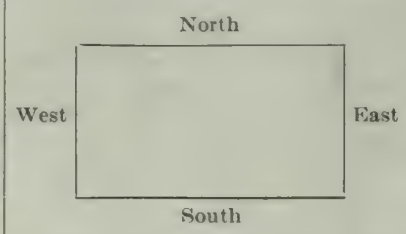
Perhaps the greatest drudgery a woman has to contend with on a farm is a poor water supply. President Joseph Cook of the Mississippi Normal College in a bulletin of the United States Bureau of Education, says "the getting of water from the source of supply to the point of application requires more manual labor than any other item of housekeeping. The water for the kitchen has to be lifted from the well, carried to the kitchen, hoisted into a kettle and poured into a dish pan and from the dish pan out of doors." This makes six times the water is handled, and a bucket containing two gallons with the containing vessel will weigh 20 pounds. When this is handled six times the total lifting is 120 pounds. The cooking of three meals a day on a meager allowance of water will necessitate 10 buckets, which will make for cooking alone 1200 pounds of lifting a day. When to this is added the water necessary for bathing, scrubbing and the weekly wash it will easily bring the lift per day up to a ton, and the lifting of a ton a day will take the elasticity out of any woman's step, the bloom out of her cheek and the enjoyment from her soul. An isolated farm can be supplied with a system of water works for an outlay of about $250.00: pump $25, gasoline engine $40, tank $20, bath tub $20, commode $20, kitchen sink $4, 500 feet of pipe $40, valves and installation $75. These figures are for first class porcelain fixtures, cheaper fixtures can be had. Such a system, if intelligently and compactly planned, will not only supply all of the household needs, but will supply practically all the farm needs besides.

Home Extension Work.

Below is a list of questions, one lesson of ten which are furnished by the University to rural women's clubs organized under its direction. They are suggestive of improvements that might be made.

SERIES 1—LESSON 1.

1. (*a*) Estimate the number of hours of work per day for one week.
   (*b*) Estimate the number of hours of leisure per day for one week. Divide both numbers by seven.
2. (*a*) Count the number of steps you take in the kitchen in some one hour when busy.
   (*b*) Do you make a practice of sitting at any of your work?
3. (*a*) How many steps from the stove to the wood pile?
   (*b*) Do you bring the wood in yourself?
   (*c*) Have you any stairs to go up and down in going in and out of your kitchen and to the yard?
   (*d*) How is the water supplied?
4. (*a*) What conveniences have you in the kitchen that were not in use twenty-five years ago?
   (*b*) Make a list of those you have.
   (*c*) In what line of kitchen work would you desire a labor saving device to be next invented?
5. Make an outline of your kitchen and fill in data. Give length and width of room. Indicate doors and windows, points of compass, position of sink, stove cupboard. Suggest two or more improvements in your kitchen.



Answer these questions on separate sheet of paper.

Indicate question number thus: Series 1—Lesson 1. Question 1 (*a*), 1 (*b*), and so on through the five questions.

Write name in full. Write name of club. Send to Lillian D. Clark, Agriculture Hall, University, Berkeley, Cal.

Pre-Natal Influences.

To the Editor: One of the most vital and helpful movements of the day is that which aims to give the coming little ones their birthright. Few mothers realize their power to make or mar the new life in the sacred time before birth.

Dr. Josephine Baker, Director of the Child Hygiene of New York City, declares that 40 per cent of the babies that die in the first year of life, die during the first month—and nearly all because of unfavorable pre-natal conditions. Plain, nutritious food, fresh air, daily exercise and perfect freedom in dress are essential at this time if the mother would endow her child with a strong, robust constitution.

Her mental and emotional states profoundly influence the forming mind and soul of her babe for good or ill. If she will cherish only beautiful, kindly, happy thoughts and aspirations, and an earnest, all-absorbing desire or prayer that her little one may be lovely, pure, and good, experience proves that it will almost certainly be so. It is infinitely better to form the new life aright in the beginning than to attempt to reform it afterward.

Cooking Recipes.

GRAPEFRUIT SALAD.—Grapefruit and white grapes are used. Cut the grapefruit into small sections free from white pith and seeds. Add to it half its quantity of white grapes cut in halves and seeded. Dress with a little salt, three tablespoonfuls of oil, and one tablespoonful of lemon juice. Let stand in the dressing for about an hour and serve on lettuce leaves—Subscriber.

APPLE AND RICE COMPOTE.—Make a syrup of a cupful of sugar and half a cupful of water. Drop into this medium tart apples pared and cut into quarters. Lift out when they are tender but unbroken, then add to the syrup a little stick cinnamon, or orange peel, and cook until thick and rich. Have a mold or baking dish lined with steamed rice; into this place the apples and strained syrup, and cover with a slightly browned meringue.

APPLE BUTTER.—Boil fresh cider down to one-third. To every gallon add three quarts of apples, not too sour, pared and quartered, one teaspoonful ground cinnamon, a quarter of a teaspoonful of ground mace, and three

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cupfuls of sugar. Stew carefully so that it does not burn, and stir often. When very thick and smooth remove from fire. When cold put in stone jars.

BOILED EGGS SERVED IN CREAM.—Boil 6 eggs for about 15 minutes. Shell and cut off a little of the white so the egg will stand alone. Boil 1 pint of cream and thicken with 1 tablespoonful flour. Season with salt, pepper and a little butter. Pour the cream over the eggs, garnish with grated yolk of a hard-boiled egg.

MINT JELLY.—Use any good cooking apples, preferably greenings, for this jelly, stewing them in the usual way, and adding a good-sized package of dried mint in case you cannot find fresh mint in the garden. When the apples are soft, put into the jelly bag, strain off all the juice and measure it. Make in the usual way, adding to the juice the contents of another package of mint tied up in a muslin bag, and color a delicate green with the harmless vegetable coloring that may be purchased at the grocer's.

CIDER APPLE SAUCE.—There are two ways of making this. One is to boil the cider down to a third, and then cooking in it pared and quartered sweet apples. This is to simmer for several hours, being almost constantly stirred, and when thoroughly soft and of a rich brown color, it may be canned or simply cooled and packed in jars. It differs from apple butter in that it is made from sweet apples, and that no sugar or spices are used. The other process calls for dried sweet apples. Boiling the cider down to half will be rich enough for this, as the dried apples are much richer than fresh ones, an dbesides the mixture will need longer cooking, which also adds to the richness. Stir very often, to prevent burning, and when done simply put in jars.

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Our Young Folks

Who Ate Humble Pie?

It was cool and pleasant in the shady sitting-room; and Kathy glanced about her with a little sigh of content, as, with "Westward Ho!" in her hand, she sank into the inviting depths of the great willow rocker, thinking of the long morning before her "with nothing to do but read and have a good time." At first she wished that her brother Jack and his friend, Theo Lane, would move farther up the piazza, for their chatter just outside the closed blind distracted her attention. But presently she lost all consciousness of her surroundings in the engrossing account of Amyas' chase of the Spanish galleon; and, as the end came, and Amyas hurled his sword into the sea, she came to herself with a long-drawn sigh, to hear these words:

"Suppose we go this morning. It's such a fine day, and we can get off in two hours. It's only ten now. We'll row up to Shafton and eat our lunch there, then fish awhile, and, when it gets cooler, go on up to Nestley and camp out, getting back home tomorrow afternoon. What do you say to it? Will you go?"

It was Theo who spoke; and it was Jack who answered hesitatingly: "Why, I—don't know. If mother was at home"—

"Wouldn't she want you to go without telling her?"

"Oh, yes! That's all right. I told her we might go any day, and she thought it would be fine for us. But there's the lunch, you see, and—other things; and our girl's gone home to spend the day."

"But Kathy's home, isn't she?"

"Y-e-s, Kathy's home. Well, all right," rather hurriedly, as though to ward off the next question. "I'll go. I guess I'll manage somehow. Let's go out to the barn and see if the tent's all right. Then you can go and get your traps, and I'll meet you at the boat-house." And off they went, leaving Kathy with burning cheeks; for what if Theo had pressed his question?

She knew why Jack hesitated, and of what Jack was thinking when Theo suggested her getting the lunch and attending to "the things." It was a sore subject—this of asking favors of Kathy. It was a week now since one had been asked of her, and Kathy had found the "severe letting alone" not altogether as pleasant as she had anticipated. She had told Jack on that occasion—and in real earnest, too, or sweet-tempered Jack would not have resented it, she knew—that she wished that he would let her alone, with some looks and a manner added which more than took the place of what else she did not say. She could hear Jack's hurt, angry voice now—the voice which was so seldom heard in any but laughing, merry tones—as he said:

"You won't be troubled to do anything for me in a hurry. I'll go without if there is no one else to ask, if I can't do them myself—and there are some things, worse luck, that I can't do myself—before I will come to you again. For it isn't the first time, by a very good many, that you've thrown favors to me like a bone to a dog!" And then he had gone off with a red face, and after that mother or Nora was applied to.

But now mother and Nora were both gone.

"He'll have to ask me," thought Kathy, triumphantly, to herself; "for getting lunch is one thing that he can't do. He'll have to eat humble pie, after all!" And then she tried to settle down to her book again, while waiting for Jack to appear and perform that gastronomic feat.

But somehow the book seemed to have lost its interest, though at so exciting a point, and her thoughts would wander off to Jack. And then, by and by, Kathy's better nature began to wake up and assert itself. "Don't you think you ought to be ashamed of yourself that, instead of being ashamed and sorry for the ungracious way in which you have met his requests, you are fairly gloating over his helplessness? Suppose you were obliged to depend on some one to sew on your buttons, to get your lunch, to darn your stockings, how would you like to be met with a scowl and a tart word, and how does Jack meet a request of yours?"

Down to the floor dropped "Westward Ho!" and out of the room ran Kathy; and the next moment she was in the larder taking account of stock.

Almost a whole chicken, to begin with. To be sure, it was to have been for their dinner; but she would cook herself some eggs, and Jack should have it all. Plenty of sweet, fresh bread and butter, some hard-boiled eggs; for there were four meals to be provided, and boys were so hungry! A basket of fresh strawberries, which Jack had picked an hour ago; but not a mite of cake—peeping into the cake box. How careless of Nora!

"Jack's ever so fond of those nice cookies you know so well how to make," something seemed to whisper. "Never mind if it is hot out here: make them!"

Kathy was bustling about gathering her materials when she heard Jack come in and go up to his room. "I'm glad he didn't come in," she thought, adding: "Poor Jack! I've been just horrid to him! I believe," rolling out her dough vigorously, "that I'll tell him so. I never guessed, till I tried it, how perfectly horrid it is not to have people ask you to do things."

A great basket stood upon the table, surrounded by chicken, bread and butter, cheese, eggs, etc.; and Kathy was just taking a pan of beautifully browned cookies from the oven, when Jack opened the door and walked into the kitchen with a perplexed expression on his face, which Kathy, glancing around, had barely time to catch before it was exchanged for one of utter astonishment, as her brother cried:

"Why, Kathy, what are you doing?"

The color in Kathy's cheeks was not all from contact with the fire; and there was a queer little shake in her voice as she replied, turning the cookies out upon a dish:

"Why, I thought that somebody might be going off, and would want a lunch."

"Do you mean you are doing this for me?" exclaimed Jack, quite forgetting to wonder how she knew, the fact that she was doing it unasked being so much more wonderful. "Are you getting this out-of-sight lunch and making these jolly cookies on purpose for me?"

That was too much for Kathy. That Jack should be so overwhelmed that she was doing him a kindness forced the unflattering truth of her selfishness upon her with a keen pain. Down went the pan, and down went Kathy's face in her hands.

"Why, Kathy, old girl, what is it?" And the next moment Jack's arms were about her; and, with her face buried close on his shoulder, Kathy managed to sob out her confession, ending: "I don't wonder you hate me, Jack; but I'll never be mean again."

"Nonsense!" said Jack, with his hand under her chin, making dabs at her wet cheeks with his not immaculate handkerchief. "Nonsense! Who said I hated you? Why, I expect I am no end of bother! Come, cheer up and turn off the waterworks, and we'll 'live happy ever after.' My, you're a regular trump to get me up such a spread!" And, with something very like a blush, he gave the wet cheek a hasty peck, and turned to contemplate the "out-of-sight lunch."

"He's the dearest boy in the world," said Kathy, as, after watching Jack off for the river, she returned to the sitting-room: "he's the dearest boy in the world, and—I am so happy! I wonder if humble-pie always leaves such a pleasant taste in one's mouth?"

—Annie L. Hannah, in Zion's Herald.

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THE MARKETS.

San Francisco, Aug. 12, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Some excitement still prevails in Eastern and Northern markets, with easier prices. Japanese buyers have been active in the North. The local market is getting back into normal condition, with fairly active business for jobbing account, and spot prices are quoted a little higher.

California Club, ctl....	$1.57½@1.60
Forty-fold	**1.57½@1.60**
Northern Club	1.57½@1.60
Northern Bluestem ...	1.62½@1.65
Northern Red	1.57½@1.60

BARLEY.

Shipments out of the country are still tied up, but the outlook appears a little better, and local buyers show more interest. Spot feed is fluctuating somewhat, but at the moment is higher, and some business has been done in brewing.

Brewing and Shipping.	$1.00 @1.05
Choice Feed, per ctl...	$0.95 @1.00
Common Feed	**Nominal**

OATS.

Offerings of new oats are ample for current needs, and a little more business has been done. Red feed is slightly higher, though there is no very urgent demand here.

Red Feed	$1.10 @1.15
Seed	**1.17½@1.25**
Gray	**Nominal**
White	**1.22½@1.27½**
Black Seed	**Nominal**

CORN.

The Egyptian varieties are nominal, as local offerings are entirely cleaned up, and there is little demand locally. Eastern shows quite a sharp advance, spot offerings being light. No California corn is offered, and foreign stocks are of poor quality and hardly quotable.

California Yellow	**Nominal**
Eastern Yellow	$1.90 @1.95
Eastern White	**Nominal**
Egyptian	Nominal
Milo Maize	Nominal

RYE.

Some California grain is offering, and prices have been marked down a little.

Rye, per ctl.....	$1.40 @1.50

BEANS.

The bean market is rather unsettled at present, owing to the close clean-up of spot stocks, the rather large crop in prospect, and varying opinions on the effects of the war. Prices have shown considerable fluctuation in the last few weeks, and the local figures are not always in line with those prevailing in the country. California bayos have dropped, with sufficient foreign stock to meet the most urgent needs. Cranberry beans also have been marked down rather sharply, horse beans and small whites are down a little, and local dealers are quoting much lower prices for spot limas. While supplies generally are scarce and some time will elapse before new stock reaches the market, buying from the old crop in most lines is about over, and the prospect of a large output may have a slightly depressing influence. As for limas, however, the curtailed imports of competing goods should tend to stiffen the market. The New York Journal of Commerce says: "Leading operators say that the demand for dried lima beans is increasing by leaps and bounds. Prices are advancing proportionately. One handler states that it looks as though no beans will be imported this fall, and that California would not only have to take care of domestic requirements, but would have to supply Canada, the West Indies, and a portion of South America, which have heretofore relied upon Europe for supplies. Telegrams from the Coast report the market on limas as strong and steadily advancing with the inside quotations $6 per 100 lbs. for August, $5.50 for September, and $5.25 to $5.30 for October, f.o.b. common shipping point. Some brokers are advising their clients to buy limas at the best price they can get, asserting that prices will unquestionably go higher. Growers who have not yet contracted their output are holding for exorbitant prices, notwithstanding the fact that the crop conditions and prospects were never better."

(On wharf.)

Bayos: Cal., per ctl....	$5.00	@5.50
Mexican	3.00	@3.50
Blackeyes	6.00	@7.00
Cranberry Beans	4.25	@4.50
Horse Beans	1.50	@1.90
Small Whites	4.50	@4.75
Large Whites	3.75	@3.90
Limas	6.50	@6.75
Pea	**4.25**	**@4.50**
Pink	**4.20**	**@4.30**
Red Kidneys	**Nominal**	
Mexican Red	**6.50**	**@6.75**

SEEDS.

Alfalfa is entirely nominal at present, as the new crop is not yet offered here, and there is practically no demand for old seed. Canary and hemp have been marked up a little.

Alfalfa	Nominal
Brown Mustard, per lb....	**3¾c**
Canary	8 @ 8½c
Hemp	2¾@ 3¼c
Millet	**2½@ 2¾c**
Timothy	**7½@ 8 c**
Yellow Mustard	**Nominal**

FLOUR.

So far no advance is quoted in local grades, but the advance in the East has been quite general, causing a little more active movement.

Cal. Family Extras....	**$5.80**	**@6.20**
Bakers' Extras	**4.80**	**@5.40**
Superfine	**3.90**	**@4.20**

Hay and Feedstuffs.

HAY.

Arrivals continue on about the same scale as before, which is not large for this time of year. The quality, however, is for the most part only poor to fair, and choice offerings find a fairly ready market. The demand, however, is small, and ordinary stock is very hard to sell. Shipments on consignment make up a large part of the arrivals, and this tends to keep the market down. There is very little buying for dealers' account in the country; and there seems to be a general disposition to let the grower carry the stock, which is attributed to financial conditions, as well as to the general belief that prices will be no higher in the immediate future. Consumers as well as dealers are holding off.

No. 1 Wheat, or Wheat and Oats	**$ 9.50@10.00**
do No. 2	**7.00@ 9.00**
Barley	**6.00@ 8.00**
Tame Oats	**7.00@11.00**
Wild Oats	**6.00@ 8.00**
Alfalfa	**6.00@ 9.50**
Stock Hay	4.50@ 5.00
Straw, per bale.....	40@ 45c

FEEDSTUFFS.

No further change has been made in prices, all lines being steady as now quoted. The demand is only moderate and business is mostly of a small jobbing nature.

Alfalfa meal, per ton....	$16.00@17.00
Bran, per ton.....	**25.50@26.50**
Oilcake Meal	33.00@35.00
Cocoanut Cake or Meal..	**26.00@27.00**
Cracked Corn	**41.00@42.00**
Middlings	32.00@33.00
Rolled Barley	**21.50@22.00**
Rolled Oats	**28.00@29.00**
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Supplies in several lines are falling off a little, causing some advance in prices. Several late varieties, however, are in larger supply than before. The general demand locally, although a little better than last month, is by no means large for this time of year. Ordinary offerings of green peppers are slightly lower, though choice lots are held up to the former figures. The demand for green peas is limited, and with no very attractive offerings there is a drop in the inside price. Tomatoes have stiffened up a little, with somewhat lighter offerings, and choice lots bring a premium. The best offerings of cucumbers are also higher, while string beans are lower. Arrivals of green corn have been very heavy this week, causing a sharp cut in prices, and eggplant, cream squash and okra are all lower.

Green Peppers, lugs.....	25@	40c
Carrots, per sack.....	**35@**	**50c**
Green Peas, lb.....	2@	4c
Tomatoes: Delta, lugs...	35@	50c
Beans: Wax	1@	2c
String	1@	2c
Cucumbers, lugs	15@	35c
Eggplant, lugs	35@	50c
Green Corn, sack	50c@	1.00
Summer Squash, box....	**25@**	**35c**
Cream Squash, box.....		40c
Okra, box	25@	50c

POTATOES AND ONIONS.

The shipping demand lately has fallen off greatly, and with a large crop and a rather light local demand prices have been again marked down on Delta potatoes. Onions are easy as last quoted, while sweet potatoes have taken quite a drop, with rapidly increasing supplies.

Potatoes:		
River Burbanks	75c@	$1.00
New Potatoes, lb.....	1@	1¼c
Sweet Potatoes, lb.....	1½@	2c
Onions: New Yellow, sack	80@	90c
Garlic, new, per lb.....	5@	8c

Dairy Produce.

POULTRY.

Broilers have advanced a trifle, other lines standing as last quoted. The demand is rather light, and while Eastern stock is in hardly as large supply as before, shipments from nearby points are fairly heavy.

Large Broilers	19	@20 c
Small Broilers, per lb...	19	@20 c
Fryers, per lb.....	**19**	**@20 c**
Hens, extra, per lb.....	**16**	**@17 c**
Hens, large, per lb.....		**16 c**
Small Hens, per lb.....	15	@16 c
Young Roosters, per lb..	20	@21 c
Squabs, per doz.	**1.50@**	**2.00**
Geese, per pair	**2.00@**	**3.00**
Ducks, doz.	4.50@	8.00

BUTTER.

The San Francisco Dairy Exchange has passed a resolution that 10% shall be regarded as a legitimate margin of profit for handling consigned goods. This covers all lines handled by the Exchange.

Butter has taken a little jump in the last few days, all offerings being readily absorbed, though arrivals continue fairly large.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	25½	25½	25½	25½	26	27
Prime Firsts ..	23	23	23	23	24	24
Firsts	22	22	22	22	22	23

EGGS.

The advance in eggs continues steadily, with a material decrease in offerings, and a stronger demand from many points due to curtailment of home production.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	31	31	30	31	33	34
Firsts	27	27	27	27	28	28
Selected Pullets...	27	27	26	27	28	28

CHEESE.

The cheese situation shows little change. Y. A.'s have lost the ½c gained last week, and Monterey cheese is a little higher, but there is nothing to indicate further change in the immediate future.

Fancy California Flats, per lb...	**14 c**
New Young Americas, fancy....	15 c
Monterey Chese	13½@14½c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter: Extras..	22½	23	23	23	23	23
Eggs	32	32	32	32	32	34
Cal. Cheese: Flats ...	13	13	13	13	13	13¼

Deciduous Fruit.

Several lines have been coming in more slowly for the last few days, enabling the trade to clean up fairly well, though prices are still easy on many descriptions. Strawberries are a little lower at the top figures, while raspberries are about cleaned up, and huckleberries are slightly higher. The apple market is easier, with a rather limited shipping demand, and the top figures for all varieties have been reduced. Quinces are moving in the usual limited way. Pears are lower, with liberal supplies including considerable ripe fruit; and peaches in lugs have also been marked down. Plums show a sharp advance, as there are not many coming in at present. Black figs are lower, with large shipments from Solano county; but the white variety shows more firmness. Offerings of cantaloupes are still excessive, and prices are dragging badly, other melons standing as before. Tokays are now appearing, and all other grapes are lower, though there is a very fair demand for attractive lots.

Huckleberries, lb.	10@	15c
Blackberries, chest	**$ 1.50@**	**2.00**
Strawberries, chest	1.75@	3.00
Apples, New Crop:		
Alexanders	50@	75c
Gravenstein	50@	90c
Crabapples	30@	85c
Quinces, box		$1.00
Nectarines, crate	50c@	1.00
Pears, box, large.....	60c@	1.25
Peaches, crate	25@	35c
do lugs	40@	60c
Plums, crate	40@	80c
do lugs	75c@	1.25
Prunes, lugs	75c@	1.25
Figs: Black, single layer.	30@	35c
White	65@	85c
Cantaloupes, crate	30@	65c
Watermelons, doz.....	75c@	1.50
Casabas, lugs	50@	75c
Grapes: Malagas, crate..	50@	75c
Tokays, crate.....	90c@	1.00
Seedless, crate	50@	75c
Muscat, crate	50@	75c
Fontainbleau, crate ...	50@	70c
Black	25@	40c

Dried Fruits.

Local packers describe the dried fruit market as featureless and dull. Shipping and financial conditions caused by the war have brought a feeling of uncertainty, which is not propitious for a buying movement, while the outlet in export trade is temporarily cut off. Buying in the country has accordingly been stopped to a large extent, and everybody seems to be playing a waiting game, the Eastern demand being very limited. While the final effects of the war cannot be predicted, and no certain forecast can be made of the market, it would seem at least reasonable to suppose that the curtailment of European crops would ultimately strengthen the market for all California fruits, especially prunes, and that the effect might be felt in cheaper lines, such as peaches. The present tie-up of shipping will doubtless be used as a bear argument, but there is no telling when this condition may change; and the sharp advances made in numerous food products may be an indication of the course of events. The only quotable change for the week is a decline in peaches, some sales having been made at these figures. The New York Journal of Commerce says: "With the export outlet for California dried fruit closed for the time being, and the home trade indifferent, the market for all staples is weak and unsettled. It is hard to say just what could be done in the way of prices at present, but that they are anywhere from a quarter to half a cent lower than the figures quoted a week or ten days ago admits of little doubt. There is a wide range to quotations on prunes. Some of the big packers who are long on stock are not disposed to shade a 6c f.o.b. Coast four-size basis on 40s to 60s in equal quantities, but there are others who are willing to book orders at 5¼ and even 5⅛c. No business is being done for export and the home trade is buying little if anything at present. On the spot the movement, as usual at this time of the year, is light, but stocks held here are small and in few hands, with the result that New York store prices are held steadily up to previous quotations.

"According to some reports, Coast holders of apricots, having practically not outlet in European markets, are disposed to force sales to the home trade at a considerable concession from the prices quoted early, but are getting no encouragement from American buyers. Prices are nominal, and it is impossible to tell just how

low holders would go to get business. In peaches the market is weak and f.o.b. prices are nominal on the basis of 4½c for choice and extra choice f.o.b. Coast.

"California seeded raisins get little attention, and prices on spot as well as for shipment are nominal."

Evap. Apples, 1914	5 @ 6 c
Apricots, 1914	8½@ 9 c
Figs: White, 1914	3c
Black	2 @ 2½c
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914	5¾@ 6½c
Peaches, new	3 @ 3½c
Pears	8 @ 9 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@ 4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

An easier tone was noted in the Eastern Valencia markets last week, and a corresponding lowering of prices was the result. Among the reasons given for the dropping off are the arrival in all Eastern markets of heavy supplies of Georgia peaches and local deciduous fruits, also to the fact that all Trans-Atlantic liners have stopped running. These ships ordinarily take immense amounts of Valencias. Another factor is that shipments recently have been heavy from California, and with all of these factors it is natural for lower prices to prevail.

The lemon situation is largely guesswork at this time, as so much depends upon the outcome of the European war. If Italy should become involved in the war, all markets for Sicilian lemons would be shut off, leaving the markets entirely open to American fruit, while, on the other hand, if European markets should remain closed and Italy remain neutral, the American markets would be her only outlet and prices would likely suffer as a result. Lemon shipments from California are not expected to increase materially until about September 15. The last shipment of Sicily lemons was on July 30, no shipments having been reported in New York since that time.

The Valencia market at New York, August 10, was slightly better, 19 cars selling for an average of from $2.15 to $3.55. The Boston market was showing some improvement, 12 cars selling for an average of from $2.15 to $3.50. The St. Louis market on that date was steady, 5 cars of Valencias selling for an average of from $2.10 to $2.80. One car of lemons sold on this market for an average of from $4.75 to $5.60.

The curtailment of importations in the East has brought a sharp advance at primary points, and San Francisco dealers have not followed the upward move, putting the figures far above those formerly quoted. The inside figure on Valencia oranges has also advanced a little, other lines standing as before.

Oranges: Valencias, box	$ 1.75@ 2.50
Med. Sweets, box	1.00@ 1.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.00@ 2.50
Lemons, box	5.50@ 7.50
Limes, case	4.00@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

Local packers have picked up a good many almonds in the country at the prices quoted, but the principal movement has not yet started. With foreign nuts out of the market, a strong demand may be expected in the East. Walnuts are maturing early, but prices have not been made.

Almonds, 1914 crop:	
Nonpareils	17¼c
I X L	16¼c
Ne Plus Ultra	15½c
Drakes	13¼c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

The honey situation this season is peculiar, the promise of heavy production having failed to materialize, at least in the central and northern districts. Early reports on the southern crop indicated a very good output, but shipments now coming in from the Sacramento and San Joaquin valleys show that those sections are producing even less than last year; and even in Nevada there has been a marked curtailment. The market, however, is in rather poor shape. Good comb honey, and fancy lots of extracted, find a ready sale, but there seems to be no demand for amber and inferior grades, much of which has been shipped to Germany for the last few years.

Comb: White	13 @16 c
Amber	10 @12 c
Dark	8c
Extracted: White	7 @ 9 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

There has been a fair demand in the East, but locally the movement is limited, prices standing as last quoted.

Light	31 @32½c
Dark	27½@30 c

HOPS.

Prices are little more than nominal at present, as both buyers and sellers are waiting. Buyers expect to get considerable stock when the crop is completed at rather easy prices, but growers who are able to hold count on the curtailment of European crops to bring a marked advance later.

1913 crop	12 @14 c
1914 crop	13 @14 c

Live Stock.

Beef stock is unchanged, but hogs are coming in very slowly, and have been advanced sharply. Sheep are also a little higher, while lambs are lower. Dressed beef and mutton is lower.

Steers: No. 1	6½@ 6¾c
No. 2	6¼@ 6½c
Cows and Heifers: No. 1	5¾@ 6 c
No. 2	5¼@ 5½c
Bulls and Stags	2½@ 4½c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 @ 8½c
150 to 250 lbs	9¼@ 9½c
100 to 150 lbs	9 @ 9¼c
Prime Wethers	5½@ 5¾c
Ewes	5 @ 5¼c
Milk Lambs	6½@ 6¾c

DRESSED MEATS.

Steers	10 @11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	10½@11½c
Ewes	10 @10½c
Suckling Lambs	12½@13½c
Dressed Hogs	15 c

WOOL.

So far few sales have been made of the fall clip, and values are not very definitely established, though a larger movement is expected in the next few weeks.

Fall clip:	
San Joaquin	7@ 9c

HIDES.

All local offerings of country hides are quickly absorbed, with a lively demand from tanners, and no large offerings are coming out. Values are firmly maintained.

Heavy Steers, over 56 lbs.	15 @15½c
Medium	15 @15½c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb.	15 @15½c
Light Cows, 30 to 50 lb.	14½@15 c
Kip	15½@16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	25½@26½c
Dry Kip, 10 to 15	24½@25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

The local horse market has been very quiet and without special feature this week. There have been no offerings worth mentioning, and buyers show little interest. The country demand is also less active than it has been, as the curtailment of grain shipments has stopped a great deal of teaming in several districts.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

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SPECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., Aug. 10, 1914.

The peach market cleaned up last week in exceptionally good shape. Though only moderate prices were realized, the shippers felt satisfied that they were able to dispose of their peaches in the smaller markets and not be forced into the auctions with disastrous results. The prices in the auction markets were pretty well regulated by the even distribution, and we believe that both buyers and shippers were well satisfied under existing conditions, both as to quality and price.

The pear crop from the Northwest, which is being offered from $1 to $1.25 f.o.b shipping point, has somewhat affected the late California Bartlett pear market, and, contrary to expectations, there has been somewhat of a slump within the last four or five days. Furthermore, pears from the Northwest, ordinarily consigned to foreign markets, were this season, due to the war situation, unloaded in the Atlantic seaboard points, and naturally, affected the arrivals of fruit that is generally used for home consumption.

Reports from all of the grape districts indicate that mildew has caused considerable damage and has by no means been checked, though sulfur sprays have been liberally applied, and it is not unlikely that the shipments of Tokays will be considerably short of the former estimate.

The movement of Malagas from the Fresno district is heavy and will increase within the next week. Owing to the shippers and growers working in unison with regard to the sugar test of 17%, the quality has been, so far, considerably better than last year and complaints from the buyers very few. Up to the present writing, about 400 cars of Malagas have been shipped East and have received a wider distribution than in former years.

Tokays will start moving in carlots about the 20th.

We do not predict a satisfactory market for late peaches, due to the fact that some of the middle and Atlantic States have an enormous crop, which will be ready for shipment about the 25th of this month. Virginia and Ohio alone will market within a space of thirty days 5000 cars.

The markets for the past week ranged as follows:

New York—Wickson, $1.14; Bartletts, $2 to $2.65; B. Hardy, $1.65 to $1.90; G. Duke, $1.15 to $1.95; Giants, 80c to $1.40; Elberta, 50 to 75c; Kelsey, 90c to $1.10; Gross, 97c to $1.45; Crawford, 50 to 66c; Tuscans, 50 to 70c; Diamonds, $1.05 to $1.30; Thompson Seedless, $1.12 to $1.70; Malagas, $1.60 to $1.84.

Chicago—Bartletts, $1.40 to $2.40; B. Hardy, $1.80 to $1.85; G. Duke, $1.25 to $2; Giants, $1.10 to $1.45; Elbertas, 55 to 80c; Kelsey, 75c to $1.35; Gross, $1 to $1.45; Crawford, 60 to 70c; Diamonds, $1.49; Thompson Seedless, $1.20 to $1.37; Malagas, $1.10 to $2.03.

Minneapolis—Bartletts, $1.70 to $2.55; G. Duke, $1.25 to $1.75; Giants, $1.20 to $1.60; Elbertas, 30c to $1.15; Kelsey, $1 to $1.25; Gross, $1.30 to $1.65; Crawfords, 20 to 70c; Diamonds, $1.70; Thompson Seedless, $1.05 to $1.25; Malagas, $1.05 to $1.65.

Boston—Wickson, 50c to $1.80: Bartletts, $1.45 to $2.75; B. Hardy, $1.05 to $2; Giants, 65c to $1.55; Elbertas, 40 to 85c; Kelsey, 50c to $1.50; Sugar, $1.15; Gross, 70c to $1.30; Crawford, 45 to 70c; Diamonds, $1.15 to $1.90; Thompson Seedless, $1.30 to $1.50; Malagas, $1.50 to $2.25; Bradshaw, 85c to $1.20.

Philadelphia—Bartletts, $1.85 to $2.70; B. Hardy, 90c to $1.60; Giants, 80c to $1.40; Elbertas, 40 to 75c; Kelsey, 55c to $1.55; Gross, 80c to $1.60; Crawford, 35 to 65c; Diamonds, $1.15 to $1.35; Thompson Seedless, $1.30 to $1.65.

Shipments of deciduous fruits, August 11, from Sacramento totaled 49 cars. This makes a total for the season of 6548 cars, as compared with 6039¼ cars to the same date last year.

PUBLISHER'S DEPARTMENT.

Neither the warm weather, the war, nor the close money market seem to be affecting our subscription work. During the past week we received from California farmers 233 new subscriptions, showing a healthy condition for the PACIFIC RURAL PRESS. In connection with the work of adding these names to our list we looked over the dates of older subscribers and found a few who have not renewed yet this year. To those we wish to ask for immediate settlement, as in the first place we need the money, and secondly the postal laws do not allow us to give credit for over one year, without paying extra postage. To those in arrears we are sending statements and trust you will give us an immediate response. We are glad to say that the percentage of old subscribers who will receive notices is very small, but we dislike to cut your name off our list. We are trying to print the best dollar farm paper in the world, and to do so we need your subscription and the dollar. Won't every one of you kindly remit without waiting for a bill.

V. A. Peterson, formerly of Claussen & Peterson, Blacks, Cal., has opened headquarters at Arbuckle for the exclusive handling of alfalfa seed. Mr. Peterson has been growing alfalfa seed for many years and has gradually built up a business till sales amounted to nearly 100 tons the past year, and now he expects to do a much larger volume, as his will be the only exclusive alfalfa seed house in the West.

We sometimes wonder if our subscribers believe all we say about that new book of "1000 Questions in California Agriculture Answered." If they did believe us, the edition of 5000 copies would already have been all sold, instead of only about three-fifths. At the rate the books have sold, the edition will be exhausted this year, and we want you to have one. We are making a special subscription offer in connection with this book which you should write for.

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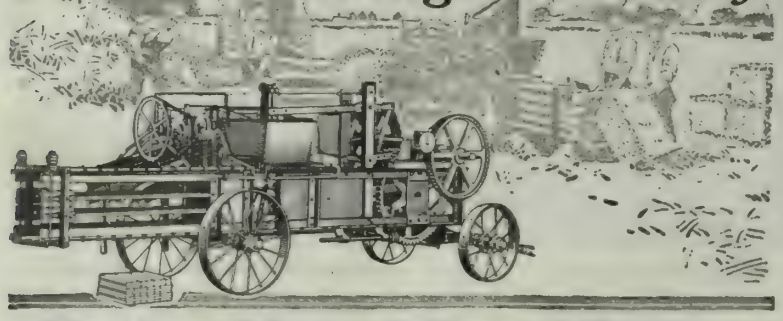

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Vol. LXXXVIII. No. 8. SAN FRANCISCO, SATURDAY, AUGUST 22, 1914. Forty-fourth Year.

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MODERN RAISIN MARKETING.

[Written for the Pacific Rural Press.]

Raisin growers a short time ago were in somewhat the position of the dried-peach growers today, in that they often had to sell their crops at less than the interest on money invested plus the cost of labor, etc. It is not so today, with the 85,000 tons which Manager James Madison of the California Associated Raisin Co. estimates will be the cured raisin crop for 1914.

How the Change Has Come.—Between 88 and 90% of the raisins grown in California are sold under 6,400 growers' contracts, according to President W. M. Giffen of the Associated, for the years 1913, 1914, and 1915, at 3½ cents per pound cash on delivery at the packing sheds, for Thompson Seedless, 3¼ cents for loose Muscatels, 3 cents for Sultanas, and 2½ cents for whatever Malagas may be offered.

A Corner in a Raisin Packing House.

The buyer is the California Associated Raisin Co., a stock concern now capitalized at $2,500,000, with $1,051,000 sold in shares of $100 each, to 4,000 persons, mostly the same growers who sell their crops to the Company, but including many merchants and bankers.

Any surplus for which the raisins are sold above the cost of marketing and a fixed charge for the Company, is returned to the growers.

Raisin Drying On Trays Between the Vine Rows.

Three years ago, chaotic distribution through many middlemen and speculators, had forced many out of raisin growing. To improve market conditions and steady the prices the California Raisin Exchange was promoted by W. R. Nutting as a central buying and selling market. This organization platted the vineyards of practically the whole State like a real estate map showing their size and ownership. The Exchange asked James Madison, a well known Fresno vineyardist and business man, to manage the proposition. Now Mr. Madison is of Danish descent, and Denmark is the home of a successful farmers' co-operation. He wanted to promote co-operative marketing, but as he says, "co-operation is largely a matter of faith," and he had seen that faith broken and the co-operation ended so many times in the Fresno district that he did some thinking by himself. When the Exchange called him, he had a plan worked out, unique in that no other such plan is in existence, and he presented this plan so clearly to the Exchange directors that the Associated Raisin Co. is the result.

How the California Crop Is Handled.—The Company's equipment financially consists of its paid-up capital, plus all that it is allowed by the State of California to borrow. At one time last season, about $1,500,000 had been borrowed, mostly from growers themselves, with which to pay for the raisins and to pay for the current packing and marketing.

The physical equipment for handling the raisin crop consists of about 45 packing plants of all but four of the companies who were in the field before the Associated undertook the packing and marketing, plus new ones at Kingsburg and Parlier and proposed new ones at Sanger and Del Rey. The Farmers' Union packing houses were bought outright and saved building new ones at those points. The old time packing companies still operate their own plants, which have been leased by the Associated, and they have their own brands on the individual packages that finally reach the consumer, but all of the packing is done under the supervision of the Associated, and under the system of grading it has established.

Grading and Packing.—The grades, as described by H. W. Piper, chief inspector of packing houses for the Company, are for stemmed and seeded raisins from the largest size down, 4-crown, 3-crown, 2-crown, and 1-crown. The 1-crowns used to include the "seedless" Muscatels, but because some seeds were found in them, the Government stopped the use of the term "seedless." The finest clusters of grapes, intended to be eaten as dessert directly from the stem, are put up in "layer" or "cluster" packs,

(Continued on Page 173.)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

ONE DOLLAR PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS CO., SAN FRANCISCO

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Aug. 18, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.14	62	48
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	96	56
S. Francisco	.00	.02	.01	68	52
San Jose	.00	00	.02	86	48
Fresno	.00	T	.00	106	64
Independ'ce	.00	.06	.00	98	60
SanL.Obispo	.00	.00	.03	90	54
Los Angeles	.00	.01	.00	88	56
San Diego	.00	.00	.00	78	62

T. means trace.

The Week.

It does surely appear more clearly than ever that we are entitled to be called "a nation of shopkeepers." We are trading on the European war so strenuously that the national government has covered the whole country with an official inquiry as to why our trading brothers have boosted the prices of their wares so suddenly loftily. Reasonable increase in selling prices might be expected, for a certain part thereof is always in the mind of a man and not in any external conditions, but to begin a general gamble in all commodities, which our commercial men, small and great, seem to have entered upon, may be what the outside world expects of an American, but not what an American should do or think of for himself. Therefore we are not surprised at the wide popular interest and approval of President Wilson's declaration that the public should know what it is all about and to what extent is it reasonable and justifiable. Nor are we surprised that the first declaration telegraphed from Washington, August 17, is that "reports to the Department of Justice tell of the creation of artificial food prices all along the line." A district attorney in one center of population not named, reported that granulated sugar had risen from $4.60 to $7.50 per hundredweight within a week; Swiss cheese from 25 to 38 cents; flour from $4.75 to $5.10; beef ribs from 18 to 21 cents per pound; sirloin 28 to 32 cents, pork loin 18 to 25 cents, and smoked ham from 20 to 22 cents. The district attorney suggested that small consumers are charged even higher prices than hotels and restaurants. A letter to the Attorney General from the manager of one of the largest live stock commission companies in the West reported that while hogs declined in Chicago one dollar per hundred pounds and cattle declined 65 to 85 cents per hundred pounds, dressed products to the consumer advanced several cents per pound.

The best way to meet this shop-keeping outbreak is to hunt it down and hold it up to the light. It is against the interests of both producers and consumers. Reports from the law offices in all cities from San Francisco to Boston announce increases of prices without cause and conditions which warrant a most searching inquiry. A few prosecutions under the Sherman act will probably take the war fever out of our circulation.

Why No Beet Sugar from California?

In the old days when the ladies used more cloth in the fashioning of their costumes, it was very amusing to a by-stander to notice the blank astonishment on the face of a man who was unconsciously standing on the train of a dress, when he received an angry glance from the wearer thereof. It is almost as funny to read a dispatch from Washington, a by-product of the above investigation, as follows: "Word came from Kansas City that there was no beet sugar on the market, although the California refineries were to have started manufacturing beet sugar on August 1. There is no apparent reason why beet sugar should not be on the market at this time," officers of the Department of Justice announced. It is certainly a humorous situation for persons connected with an administration which has done all it can to kill American sugar to see no reason why California beet sugar should be shy. It is true, of course, that the administrative policy arranged a lingering death for home-grown sugar and it is perhaps to them astonishing that it should not be brisk and joyful after receiving only the first of the three paralytic strokes which are to take it off. But apparently Californians are not to have the increased price as a compensation for the reduced manufacture which the declining tariff caused. It is understood that this year's product was largely sold by contract in the Middle West before the war cloud arose. The only sunshine in the sugar situation for California is that perhaps the war may cause an increased price to continue, to offset the tariff reduction and thus induce a larger growth of beets and the starting up of idle factories. But this will be no credit for the tariff reformers, who have thrown the power to advance prices extortionately into the hands of the importers, by their disregard of the desirability of increasing the home product.

This Makes Us Seasick.

It is indicative of the decline of sensational apprehension of evil, which a war-outbreak engenders, to find that our grain-laden ships are going out to brave the new dangers of the deep. The German cruiser Leipsic coaled in San Francisco on Monday, getting just enough to carry her about 4000 miles to the nearest German possession in Samoa and as she cannot get any more American coal for three months, it is thought she will beat it for home and not burn up her fuel waiting for prizes in our part of the Pacific. This clears us of German trouble, for Japan will keep their Asiatic squadron busy, and as for Hungarian war vessels, they seem to be looking for McGinty. Besides, exchange with England and other European countries has been reopened and war risks on merchantmen are taken by the British government. It seems likely then that all the laden ships in the bay will be going out and all idle ships will take whatever grain we have to spare. But there is trouble for the shippers of canned goods, for two English steamship lines that transport virtually all the canned goods from California to Great Britain have advised shippers that while their lines are ready to resume business, they will not supply steamers at rates contracted for, but will increase rates, and unless this increase is complied with the lines will tie up. Really the rate ought to be reduced instead of increased, because half the time can now be saved by canal, a fact not considered when the contracts were made. This act is likely to bring these Welchers up against a federal grand jury, which is more dangerous than a German cruiser.

Things Coming Our Way.

We have received a copy of a call to an organization meeting of the "Farmers' Congressional League," to be held in Chicago next week, "for the purpose of promoting the candidacy of farmers for Congress and State legislatures and to promote farmers' interests." Because of the great need of recognition of the agricultural point of view in legislation affecting agriculture, we have often urged that farmers ought to do more in a political way, but we do not believe that any promising movement toward that end can be served by such an organization as proposed. It costs us a good deal to dissent in this way, for a private note to the Editor, accompanying the copy of the call, says this: "We propose to support farmers and editors of farm papers and professors of agricultural colleges who are candidates for Congress and State legislatures on any of the party tickets." Thus it seems that we, personally, if we could get any kind of a nomination, would receive the support of this national organization. In fact, we could get such a support on two counts, while an ordinary farmer could only get it on one. It is hard to turn down such an organization when it requests publicity; it is almost as hard as to refuse a free ticket in an automobile drawing. But we always have preferred principle to personal aggrandizement, and so we must say that the way to get farmers representation in legislative bodies is not to organize a national hue and cry, which must of course cost someone a lot of money and profit only the organizers thereof, but to go to work in one's own neighborhood, choose a man well known in the community for good farming and for good public quality also, and get those who know him to work together to secure for him nomination and election. It is of course not enough that such a man should know good farming and do it: he must be wise in public ways, shrewd and far-seeing, able to acquire and exert influence, proof against wheedling and temptation—and all that. The way to get such men into politics is not by so-called national organization, but by neighborhood effort. If they get a good home-start, such men will make national connections for themselves.

During the War and After.

Declarations by two national Californians strike us as well worth considering, and we submit them without comment: Secretary of the

Interior Lane predicted in an interview the other day, that the European war will result in a vast development of the mineral and manufacturing resources of the United States. "It is possible to so develop and utilize our mineral and manufacturing resources, particularly in the West," said Mr. Lane, "that the label 'made in the United States' will become familiar around the world." Mr. Lane believes the war is an opportunity for this country to become the trade mistress of the world.

And as it will require both men and money to achieve this development of the West, it is interesting to note that on the same day Commissioner-General of Immigration Caminetti said that, while there will be a great drop in immigration from Europe to the United States during the war, when peace occurs there will be a tremendous increase in the number of immigrants. Last year 1,218,000 aliens were admitted, and just before the war began, an average of 90,000 per month were arriving in the United States. Now practically none are coming. Mr. Caminetti said he looked for an immigration of 2,000,000 the first year after the war ends. Think of these things and figure what California food-producing land will be worth when these things are realized.

Hot Birds and Cold Bottles.

We acknowledge receipt of another invitation from the Conservation of Wild Life Society to join their effort to prohibit the sale of wild game, by the passage at the next election of the Referendum amendment known as "non-sale of game." As we stated in our issue of July 18, the argument of the society is condensed in this way: "permitting sale of game on the market benefits market hunters, game dealers and keepers of various high-life places in San Francisco and acts directly against the interests of the farmer because the species is finally extirpated." If we were as sure that the preservation of wild game species would be as great a benefit as the extirpation of the human species which ministers to high life in San Francisco would be, we might enthusiastically support the proposition. The argument that preservation of wild game would be of great advantage to the farmer seems to be largely based upon the attitude of certain birds toward insects which we have no desire to question, though there are other birds whose chief purpose in life seems to be evil, viz.: toward the promotion of rural profanity. But the emphasis laid upon the services of good birds for the sake of winning the support of open-valley farmers for game laws has a tendency to obscure or minimize the real interests of farmers who have to produce crops and keep animals among the hills and in the small valleys adjacent to forests and other areas of wild land. In fact we incline to the opinion that the extirpation of several species of wild birds and animals which are in the game list would be of decided advantage to farming, especially in the more remote districts which it would be of great advantage to the State to populate and develop. Aside from this play for farmers' support there seem to be two considerations actuating the promoters of the non-sale proposition. One is the interest and joy of the nature-lover-scientist group, which, as we have claimed before, should be served at public expense by reservations in really wild places, and for which we have due respect and regard. The other consideration is the interest of the amateur killers, politely called "sportsmen," and their relation to the agricultural interests is, at least, very doubtful. It is also questionable how far their recreations should be considered a public interest, but we pass that point. It is, however, clearly doubtful how far the farmer can be called upon to respect recreations which make his property a shooting gallery—especially as he wakes on certain mornings of the year to regard his habitation as located on the field of Waterloo of 1815 or 1914, it matters little which. As between the pot-hunter and the sportsman, we cannot see that the farmer really has much choice. Probably, on the whole, he is less hurt by the former, because for the shooting of reddish cows and brown-jeaned workmen for deer, the amateur sportsman holds the medal: the business-like pot-hunter would scorn to waste ammunition that way. And so, as the whole question seems to be floating in a maze of doubt, if one tries to look at it from an agricultural point of view, and though we are inclined to be against the conservation of "wild life" both in the city and country, we advise all our readers to think it over carefully and vote as their greatest interest seems to be. In that way the true spirit of the referendum-recourse will assert itself and show us all the numerical relation of interests which are clearly conflicting.

Queries and Replies.

Querists must submit full names and addresses.

Ashes and Mottled-Leaf.

To the Editor: Before my young grove was planted, two years ago this spring, a quantity of brush was burned on one corner of the ten acres. The trees planted at this place show mottling on some of the trees. As a rule the trees look well, have grown and are vigorous, and those in the spot mentioned are the only trees in the grove which have mottled leaves. In looking for a cause the only thing we could think of was an excess of alkali due to the presence of the wood ashes. Do you think they have caused the trouble? If so, how can we correct it?—D. M. E., Rialto.

It is altogether probable that you have correctly fixed upon the cause in your case. The way to remove the excess of potash is to leach it out with water or in this way distribute it through a greater bulk of soil. If the soil is loose and distributes water well, simply irrigate generously from time to time. If water stands, however, you must under-drain the spot or you may give the trees something worse than mottled leaf. Unless you burned a frightful amount of brush in that spot, however, the possible excess of potash would disappear soon, under ordinary irrigation and rainfall.

Tubbing Orange Trees.

To the Editor: Could I take up orange trees, one year old from bud, this fall, put in tubs and set in greenhouse? I am afraid of frost.—N. M. C., Red Bluff.

You surely can. Let the new growth on the bud stop and harden somewhat; take up with a ball of earth on the roots and fill around the ball in the tub with good, friable loam. Be sure you have ample drainage hole in the tub-bottom and then do not over-irrigate until new growth is starting, when water may be more freely used. Presumably you intend to grow the trees henceforward in the tubs; if not, we should burlap them as they stand and transplant to orchard next spring when the ground has become well warmed.

Leaf-Miner on Convolvulus.

To the Editor: Kindly tell me the disease infecting enclosed leaves, also the remedy for same? You will see that the plant is one of the large morning glories and the whitish spots on the leaves makes the vine unsightly.—E. V. P., Vacaville.

The leaves are affected by what is called the "leaf-miner"; that is, a very small grub working between the upper and lower "skins" of the leaf, removing the tissue between them. This grub is the larva of a very small moth. As the worm feeds inside, it is practically impossible to reach it by spraying. Usually nothing is done, because, although the insect may sometime be abundant enough to render the plants shabby looking, this seldom occurs. Of course, infested leaves could be picked off and burned if that would not require too much labor.

Pecans for Pajaro?

To the Editor: Do you think this locality favorable for paper-shell pecans, and would they be of commercial value?—H. W., Aromas.

There is no commercial product of the pecan nut in this State. Experience thus far seems to indicate that if the nut is to be profitable anywhere, it will be on the moist lowlands of the interior valley where there are more marked temperature changes. Along the coast no satisfactory results have been obtained, although the tree grows well. Of course, experimental planting on low moist soils is desirable, lest the preceding conclusion may not be altogether correct.

Grubs in Lawn.

To the Editor: How can I get rid of worms in my white clover lawn. I think they are cut or grub worms, and they have almost destroyed the lawn.—C. J., Mt. View.

We know no way to kill these grubs by applications to the soil. As the lawn is about destroyed, we should dig it up, rather shallow, leaving it loose and rough so as to expose the roots as much as possible and fence the chickens on it, if convenient, temporarily—or at least give them the run of it, until they had scratched it all to pieces and then dig deeply and re-sow.

Brown Rot and Peach Blight.

To the Editor: I send some peaches affected with a rot and some twigs which are dead or dying. Is either the work of disease which is dangerous, and what is the remedy? The orchard, as a rule, is clean, the affected trees being isolated and exceptional.—Cap., Los Altos.

The trouble with the fruit on the tree is the brown rot. The trouble with the twigs is the peach blight. Both these troubles are often found together on the tree. They are both controlled by spraying with Bordeaux or lime-sulphur just before the blossoms open. Spraying for the peach blight wtih the Bordeaux can be done to advantage just after the leaves have fallen to prevent this fungus from attacking the new growth during the winter. Both early winter and spring spraying for these diseases are therefore practiced by some growers.

Standing and Outlook of Fig Culture in California.

[By George C. Roeding, of Fresno, at the recent California Fruit Growers' Convention.]

To produce an article of food of recognized value is a source of satisfaction, but there must be another incentive, the industry must be profitable. This is the determining factor which means the continuance or the relinquishment of any business enterprise, whether it be fruit growing or any other occupation.

Does fig growing in California pay? True, we must compete with the cheap labor of Europe, but we have done this successfully in other branches of fruit growing, and the very fact that the harvesting of a fig crop can be carried on to a better advantage by child labor than any other is an additional incentive to engage in the industry. Conceding that our wages are higher, it must be remembered that our help is more efficient, and this combined with our better methods of handling, places us in the position to compete in figs as well as in other fruits.

It has been demonstrated that White Adriatic figs at 3 cents a pound are more profitable than raisins at 5 cents. Smyrna figs can be raised fully as cheap as the ordinary varieties of figs, the only additional expense being caprification, but as this does not cost over 2 cents a tree at the very outside, it is a matter not worthy of consideration. It is safe to assume that Smyrna figs, even when produced in large quantities will never bring less than 3 cents per pound, and for many years to come 5 cents and over will be the prevailing price. No class of dried fruit outside of the fig possesses so many dietetic qualities, and with a good article of food like the fig, there is unlimited field for expansion. The dried figs which were being marketed from this State prior to the successful establishment of the Smyrna fig industry. precluded any great expansion, due to the inferiority of our figs as compared with the imported article. Experience has demonstrated that there is only one variety of Smyrna figs of any value for drying purposes and this has been designated as the "Calimyrna." This is identical with the variety grown in Smyrna under the name of "Lop Injir," which is the only fig used for export. The name "Calimyrna" is a copyrighted word, and is a contraction of the two words "California" and "Smyrna." The Calimyrna is recognized in the trade as the only fig grown in California worthy of being classed as a competitor of the imported Smyrna fig of commerce.

In order to assure others who may desire to market this fig under their own brand, I wish to go on record now of encouraging the use of this name on all packs of genuine Smyrna figs grown in California. Although having the exclusive right to reserve this name exclusively for my own pack, I have never objected to the use of this name by other packers, but have on the contrary encouraged it in all instances where the figs to be marketed were the Calimyrna.

There are thousands of acres of land in California in the interior valleys in which the fig can be grown successfully and profitably. The necessary requisites for making commercial fig culture a success is a summer temperature ranging from 90 degrees to 110 degrees in the shade from July to October, with an entire absence of rain and comparatively dry atmosphere.

This does not necessarily mean that figs cannot be grown elsewhere, but rather that where conditions such as these prevail every branch of the industry is open to exploitation, from the shipping of fresh figs to the canning and preserving and finally to the drying, which is after all the only absolute and dependable method for the disposal of this crop, for the grower then has the proposition under his complete control. Figs have been marketed in this manner for hundreds of years, and although we do not wish to minimize by any means the canning, preserving, and crystallizing of figs, in its last analysis all of these processes will only take care of a very small part of the crop, when it takes its place as one of the great fruit industries of this and other States having the climate and soil conditions and the possibilities of irrigation similar to our own.

The annual production of Smyrna figs in Asia Minor varies from 25,000 to 30,000 tons, and at least one-half of this crop is sold in the United States. The output in the United States, all—or practically all of it—comes from California, and is from 3000 to 5000 tons annually.

A failure of a fig crop in California has never been known, and we will venture to say, without fear of contradiction, it never will be. Fig buyers are so certain of their ground in respect to an annual fig crop, that it has been a customary practice for a number of years in Fresno county to make from one to five-year contracts with growers for the crops on their avenue trees and for entire orchards, the purchaser paying in advance for the expected crop. The price paid depends largely on the size of the trees, but the contracts range from $1 to $5 per tree and it is no unusual thing for these contracts to involve sums as high as $5000 per annum. The contractors bear all of the expense of harvesting, and the grower merely prunes and cultivates his orchard under this arrangement. These advance contracts have been made exclusively with the White Adriatic figs, for it is only within the last few years that the Smyrna fig orchards have reached the age of full bearing.

The preserving of figs has never been attempted on any scale in California, and this is really very surprising considering the enormous demand there is for figs in this shape, and that California draws all of her supply, practically, from Texas and Louisiana.

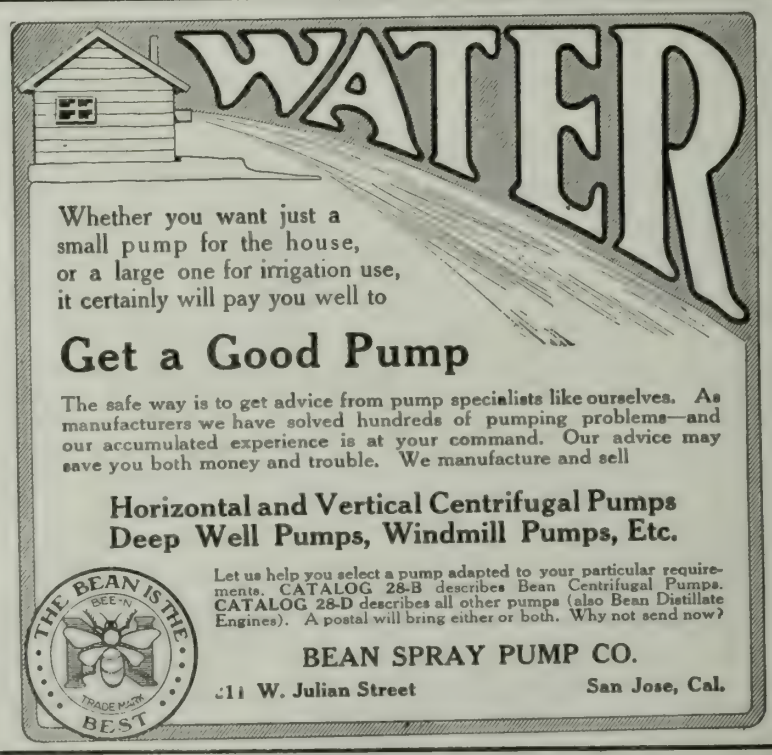
One firm in Texas puts up a large quantity of these figs, which are known there as the Magnolia, and which are in reality the Brown Turkey, a rather inferior fig at the best. The tree is a very poor and unsatisfactory grower; nevertheless when preserved the figs are very sweet and delicious, the heavy syrup being largely responsible for this flavor. The drying of the figs in Texas is out of the question, due to the rainfall during the summer months, therefore, this is the only method for disposing of their crop. Considering that this inferior fig can be manufactured into a commercial product by using proper materials to create a desirable flavor, what are the opportunities in this direction for the Calimryna, White Adriatic, White Endich, all of which possess merits making them pre-eminently better adapted to this, at the best, very inferior Magnolia fig.

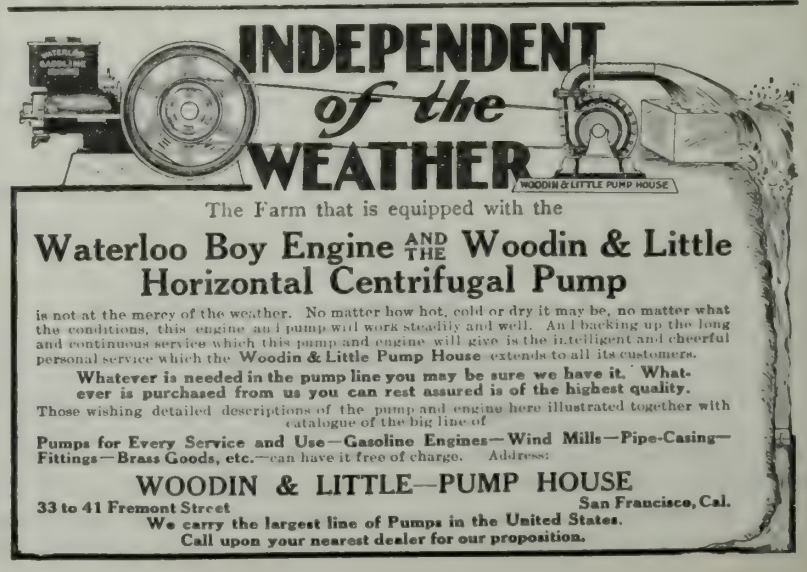
Unlike many other fruits, the fig in order to produce a high-grade article must be allowed to remain on the tree until it loses its original form, shrivels up and drops off. Sometimes it is necessary to jar the trees slightly, if the shriveled figs do not drop, or knock them off with light bamboo poles. From the orchard they are hauled to the drying ground, which should either be a hard piece of ground or an alfalfa field.

The figs are dumped on trays which are stacked at once, for, as a general rule, all figs—with the exception of the very large ones—are dried sufficiently so that when they come onto the drying ground no further exposure to the sun is necessary. One of the principal complaints made about California figs has been their tough skin. This is not due to any unfavorable climatic or soil conditions, but is the result of overdrying. The sorting of the figs may be commenced two days after they have been placed on the trays. All the figs which have a slightly leathery feeling to the touch are thrown into a pile by themselves in the drying shed, and the bird picked and split figs into the cull pile. These are not lost by any means, but sell readily at 2½ to 3 cents per pound. The soft figs are packed on trays as before, the trays are stacked, and the figs remain on them until reaching the proper degree of dryness, when they are thrown in with the others. It is advisable to leave the figs in the pile, which may be from three to six feet deep without the fruit being damaged in the least, for a period of two weeks, turning the figs over with a scoop-shovel at least once during this period or oftener if time will permit.

Just prior to delivering to the packing house, give the figs a thorough washing in a brine having not less than four ounces of salt dissolved in a gallon of water. A prune dipper may be used to good advantage for this work. The figs should remain in this brine for a period of ten to fifteen minutes, depending on their condition. They are once more placed on trays, two to three inches deep, exposed to the sun for half a day to allow the water to drain off, and the trays are again stacked. Within two days they can be dumped into [illegible] boxes, and are ready for delivery. This processing not only cleanses the figs, but it softens the skins, causing them to feel like a kid glove when squeezed between the fingers, and in addition to this the figs present a bright and most inviting aspect. They are a delight to the eye, and appeal to the palate as no other fruit does.

(To be Concluded.)





MODERN RAISIN MARKETING

(*Continued From Page 169*)

special care having been taken to keep them clean and free from objectionable berries. The largest are often labeled "Imperial Clusters" and are always marked "6-crown." The next smaller size are called "Dehesa" or "5-crown" clusters. The other two sizes, 4 and 3-crown, are often called "London Layers."

The quality of all of these grades is the same except as influenced by size. No mildewed or sunburned or "shot" raisins or other objectionable features are permitted; for the Associated has its own name on every package that reaches the jobbing trade (usually the wooden box in which smaller packages are shipped). It is more necessary that they should know of the Associated than that the consumer should know, although it is reported that the Company is soon to spend $200,000 in advertising. The individual packing company labels the inside packages with its own brand only.

The seeded raisins are shipped in 25 and 50-pound boxes and in cartons holding 12, 14, and 16 ounces. Unseeded raisins are all shipped in 50-pound boxes. The fanciest of the clusters are shipped in one and two-pound cartons, but most of them go in 5, 10, and 20-pound boxes.

The Company is putting up a new brand all its own, called the "Bear Brand" all of which is packed in its own warehouses.

Cash on Delivery of Raisins.—The grower brings his cured raisins to his local packing plant in "sweat boxes," 2 by 3 feet, and about 8 inches deep. The packer accepts them if the quality is OK. But always being anxious to hold up the quality of his own brand, he rejects some questionable fruit and the grower at once asks the Associated's inspector to pass on the quality. In case of further dispute, the Associated selects one arbitrator, the grower another; they select a third, and a majority award is binding. If the fruit is rejected from the standard pack, it may still be sold by sample and the arbitrators decide what price shall be paid the grower.

The contract price is paid immediately on delivery, and as the Associated has orders, the raisins are run through the stemming and seeding machines and immediately graded, packed, and shipped. Paraffine paper protects them from moisture or other outside influence. A record is kept of the grades each grower's raisins are put into, for future reference.

By controlling such a large part of the crop, the Associated can hold prices up, always selling for a surplus above the price paid to the growers and the expenses of marketing.

To pay the cost of the office force, of whom there are at least 35 persons now, the insurance on raisins till January 1, interest on borrowed money, and dividends on capital stock, ¼ cent per pound is reserved from the surplus for the Company. The rest of the surplus is pro rated back to the growers before the following September 1, according to the amount of each grade they have delivered. This surplus might be reserved for use instead of borrowing capital, should the stockholders so desire.

Points in the Growers' Contract.—The growers' contract with the Company permits them to sell what they wish as fresh grapes for Eastern shipment or to wineries or as bleached raisins (of which there is an almost negligible percentage). Extra quality clusters receive a higher price than the contract, on delivery.

The grower "agrees that all raisins to be produced" on the contract acres "shall be thoroughly and properly dried and cured, of good color, in original condition, free from damage of any kind, and in good marketable and merchantable condition." This is so that the Associated brand may always guarantee prime quality.

The Company has the option to extend the contract to the years 1916 and 1917, and to vary the price if import duties are changed enough to affect sales.

Organization of the Company.—The stockholders receive only a "voting trust certificate" for the amount of their stock which is issued for seven years to 25 trustees selected by the stockholders. Only the trustees may vote on any question unless they refer it to the stockholders. This arrangement is intended to prevent speculative or hostile control of the stock in the future. Five of the trustees must be residents and land owners north of a line not far north of Fresno, 5 south of Kings river, speaking roughly; and the remaining 15 from the central raisin district around Fresno. They meet four times a year to determine general policies; they elect seven directors at large, all of whom are now handy enough to Fresno to meet every Tuesday evening in the year. The directors elect the president, manager, and other officers who really do the work.

Crop Reports.—One part of that work is to keep in touch with crop conditions, a difficult task, because a difference in quality of the grapes this year might make the weight vary ½ pound per vine though the green crop be the same as last year. This would be due to small sugar content, "water grapes," or many other causes, and at the rate mentioned would make a difference of 250 pounds per acre. But reports from growers, supplemented by personal inspections of packers, Associated representatives, and others, make the estimates quite nearly accurate. The sugar content might be increased by later picking, but 20 years' experience has shown that the principal variety, Muscats, must be picked shortly after September 1 to avoid the rains which would spoil the raisins unless they are stacked and protected when the rains come.

Present Marketing Prospects.—The crop of 1912 was over 100,000 tons, and an unknown amount was held over in Eastern storage as well as on the store shelves and in the West. The 1913 crop was about 70,000 tons, and while some of that was held over past New Years, there are now orders on the books for 12,000 tons to be delivered in August and September with less than that left. New orders are coming every day, so that the 1913 crop will almost certainly be entirely cleaned up before the 1914 crop is dried. And the pleasing part of this situation is that the Eastern shelves are bare, there are practically no raisins now in storage except the few still in the hands of the Associated. In the fall of 1912, 76,000 tons were sold in five months, the heaviest shipments ever, much of which of course went into storage on account of the low prices then prevailing.

Increased consumption and demand are to be gained not only by advertising (of which Raisin Day is a sample, and the trainload recently sent East with banners flying is another), but also by the mere fact that the raisins of the future will all be fresh packed with usually less than 60 days intervening between packing and consumption. A few good fresh raisins call for more; a few moldy or dried out raisins kill the sale of still more. But the storage is cleaned up now, and the Associated holds all fruit in its original conditions until orders come, when it is stemmed and seeded for each order.

There is every reason to believe that with 15,000 tons more crop this year than last, there will be no greater holdover than there is now, and that there will be substantial returns to the stockholders as dividends and to the growers as pro rata.

The war in Europe does not worry the Associated, because probably not over 25 cars have ever been exported, while more than that are always imported, including the dried currants which probably will not come this year and will turn their accustomed trade to the California raisin. A great deal is always sold to Canada. The only chance now of trouble in marketing is that "hard times" might reduce the buying power of the American public if such hard times come.

All varieties are so far along now that only the most unusual weather conditions would seriously affect the output, and with an absolutely certain market at a profitable price, raisin growers may well feel prosperous.

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California Vegetables in Garden and Field

By E. J. Wickson, A. M.

"California Vegetables" is handsomely printed, contains many cuts, has over 300 pages, and is bound in cloth. The contents cover every phase of vegetable growing, including farmers' gardens, California climate, vegetable soils, irrigation, drainage, cultivation, fertilization, protection, weeds, seed, growing, location and arrangement, planting season, propagation; also description and methods of handling all varieties of vegetables grown here.

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What is the Standing of Japanese Pear Stock?

To the Editor: In your columns last winter, a contributor made this statement:

"French pear stock only is used for Bartlett pears by a large nursery company of the Newcastle fruit district, because the Japanese and American stocks have proved unreliable in making vital unions."

For some years I have been endeavoring to find a better stock than the French seedling, not alone because of its susceptibility to blight, but also because of its tendency to throw up numerous root suckers as a result of root wounds caused by plow or cultivator. It is a well-established fact that blight infection sometimes reaches the root through such suckers.

Rooted cuttings of the LeConte hybrid have been suggested as desirable stocks by several of the prominent growers of this State, but I do not know of any commercial orchard on such roots. Prof. P. J. O'Gara, of Medford, does not approve of the LeConte stock, stating that it is not nearly so blight-resistant as Kieffer.

Referring to Kieffer, William P. Stark, Neosho, Missouri, writes me: "Kieffer seedlings we discarded. Not reliable—subject to blight."

Since the publication of the paragraph referred to I have placed the question before a number of nurserymen whose broad experience should qualify them to speak authoritatively. I quote from their replies:

Stark Bros. Nurseries & Orchard Co., Louisiana, Missouri: "In growing pear trees, the results we have secured have been equally good on the Japanese stock as on the French seedlings, and the union is just as good." (For many years this nursery has used large quantities of Japanese stock.)

J. H. Skinner & Co., Topeka, Kansas: "We have never seen any indications that would lead us to think that the Japan stocks did not make a good union with the varieties we are growing. Recently we have had quite a strong demand from the Northwest —Washington and Oregon—for Kieffer on Japan stocks. These are used for working on other varieties of pear. We always grow the pear on both Japan and French stock, but they would not use the Kieffer on French. The people in the Northwest have some reason for wanting the pear on Japan."

Shenandoah Nurseries, Shenandoah, Iowa: "From our own experience we cannot say which is the better, the French or the Japan. We have always understood that the Japan is the better for your State. But at the same time we are shipping more French pear seedlings to California this season than we are Japan pear. We have noticed that the demand for the French is increasing every year, but do not understand from this that we state that the French is the better. We do not know."

The two last nurseries are wholesalers, doing an immense business in seedling stocks with other nurseries all over the country. If the Japan stock was not making a good union it is certain that this fact would have come to their notice in the form of complaints from their customers.

In addition to the foregoing the following from Prof. O'Gara is most interesting, particularly so in view of the fact that he is a trained, scientific observer and has been doing more or less work along the line of securing a better stock for the pear, that fruit being the principal one grown in his (the Medford) district: "Replying to your favor of recent date I beg to say that so far as I have seen here, and my experince covers a considerable field, the Japanese root stocks for pears seem to make perfect union with our standard European pears. We have some very fine commercial orchards grown upon Japan root stock and so far I have not seen any failure to make a good union. We are also using the Kieffer upon which to work our European varieties, and even with Kieffer we have had some very fine results. As a rule the Kieffers are grown one season and then the framework is budded during August, the trees remaining dormant until the following spring, when the trees are cut back to the bud. I think that if the work is properly done there should be no difficulty in getting results with the Japan root stock."

My own personal experience is too limited to have led me to any definite conclusions, but I am of the opinion that in the below-zero climate of the East, the French stock will fare better than the Japan, a condition that need not concern us in California. Here, on Loma Rica ranch, where we are propagating trees to plant 200 acres of the ranch to pears, we are using the Japan stock exclusively, in the belief that we shall find it affords a non-sprouting root and one that is measurably blight resistant. Should this prove to be the case we shall have safeguarded our planting to a very considerable degree.

Horticulturists generally, both nurserymen and growers, should give more attention to the development of the best possible stocks for all varieties of trees and under the varying conditions that arise. When definite conclusions have been arrived at there is wide room for the dissemination of information that would, if known, prevent many a costly mistake. We are jogging placidly along in an old rut, and making mighty little effort to see if there may not be a better way.

Grass Valley. A. L. WISKER.

[Of course some of this testimony is rather remote and realized where conditions are somewhat different from those in California, still we count the record pertinent. These Eastern growers do not state how much Japanese they have used in proportion to the French. We hope Mr. Wisker's collection of the data given will induce California growers, either in orchard or nursery, to give us the results of their experience and observation. We are very anxious to make out the value of the Japanese pear stock as definitely as possible.—EDITOR.]

The general opinion of members of the San Jose Grange, at their meeting last week, was that while there may be a temporary depression in the fruit markets at the present time, owing to the lack of shipping facilities, prices later on will be even higher than recent contract figures, as prunes in foreign countries will largely go to waste and the present crop in this State is light, with practically no hold-over crop.

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Selection of Citrus Trees.

[Written for the PACIFIC RURAL PRESS by J. E. ADAMSON.]

The work of Dr. Shamel along the lines of improvement of bearing and quality of the various commercial citrus fruits (outlined in the PACIFIC RURAL PRESS of June 13 and 20, 1914) has reached a stage where it can be seen that the early predictions were not overdrawn, were in fact a little understated. It has been shown that the ability to bear heavy crops of high-grade fruit is as much a matter of pedigree in a tree as is the ability of a break in butter records or any other branch of plant or animal propagation. The scions from trees of persistent bearing qualities have been budded into trees of low record bearing, and now that the buds have reached bearing age, they are reproducing all the desirable features of the parent tree.

This has been equally true in orange, lemon, and grapefruit, and there would seem to be no further excuse for continuing in service the inefficient tree which earns just enough, or less, for its keep. Nor is there any excuse for the purchase of young trees without knowledge of record of the parent trees from which the buds were taken. Reliable nurserymen should be glad to furnish such information to intending buyers, giving access to the fruit records of the orchards from which the buds were taken, and the buyer should be as interested in the grades as in the quantity, as there is little profit in producing large quantities of low-grade fruit. To those unfamiliar with the marketing end of the citrus fruit industry, there is some highly interesting information in the market reports on file in the offices of the up-to-date packing houses of the citrus belt. It is easy to see that there is an increasing difficulty in selling the lower grades.

Those of us who planted trees during the years from 1887 to 1889 have cause to regret that there was so little information available at that time. Orange trees were simply orange trees. Usually they were sold as Washington Navel, but if you asked for other kinds, there was no trouble in filling the order; all that was needed was to change the tag. In fact, there was little need to change tags, if other varieties were wanted as they were more likely to other varieties than not.

The writer has personal knowledge of several thousand trees shipped in from Florida and sold as Washington Navel, which had only a small percentage of that type and seemed to have every other orange that could be found. In many of them the bud had, no doubt, dried and a sucker had taken its place. Only one bright spot is left in the memory of those trees.

The Valencia Late, then almost unknown, was introduced among those trees. When the trees began to fruit, one of the packing house experts of those days pronounced them worthless, and advised that they be budded over. One of my neighbors has 150 of those original trees which have been a source of a fine revenue for many years.

One element in the life and productiveness of citrus trees is the root stock, and this seems so far to have had nothing developed along the line of scientific experiment which would stand as a sure rule of conduct in the propagation of young trees.

The sour orange seems to be in favor for root stock, and yet some very excellent groves are in existence on sweet orange roots.

The writer has five trees planted in 1889 and purchased from the late Mr. Meserve, being, I believe, budded on the Tahiti stock, which Mr. Meserve imported at that time. These trees are large in stature and are persistent bearers of large crops, usually double that of the Florida-raised stock with which they have been neighbors for twenty-five years. Shall we say it is the root, or the bud, which has the influence?

Along this line, let me repeat an account of the raising of that Florida nursery stock which came to me a short time ago: A gentleman who claimed to have raised a large proportion of the nursery stock sold here by Strong & Co. in the later '80s and admitting the unsatisfactory nature of the stock but laying this blame on California growers who supplied the buds, claims that the root stock has a most important influence on the future welfare of the tree. His theory is that there are only two seeds in each seedling orange which are fit to raise root stock from. These two seeds are found to be plump and full, while all the others show more or less shriveled. It is claimed that the resulting seedling stock will show the influence of these seeds all through the various stages of the growth of the tree, and their offspring can be readily picked from among the others by the more sturdy and thrifty appearance.

I offer this for what it is worth, but there is enough of the unknown in the freakiness of tree service to at least warrant the investigation of the value of the theory.

We can be sure of the influence of bud selection on the productiveness of trees, and no doubt we will yet have some well marked path to follow in the selection of root stock for the propagation of trees that will have all the attributes of efficiency—viz., productiveness and long life.

Pomona.

TALK ABOUT DOUBLE-CROPPING.

To the Editor: I have some black-eyed beans in now. They came up rather spotted but seem to be doing very well. This is the first year they have been grown on this land.

I had intended after taking the beans off to plant the ground to oats but a neighbor suggested planting field peas. He advised raising these during the winter and cultivate and then when they were taken off to replant the black-eyes. Would this be practical on our land here where it is not irrigated? It is practically surrounded by land which is irrigated and a good deal of it sub-irrigates some. The level of the ground water varies at different seasons but is about eight feet. The rainfall averages about 10 inches I think. By careful cultivation would it be possible to raise these two crops of legumes instead of one of grain and the black-eyed beans in the alternate years with this amount of moisture. The continued raising of beans would improve the soil would it not except for the removal of potash and phosphorus?—R. H. D., Modesto.

[Theoretically it will put your ground into better shape for the growth of a summer crop of black-eyed beans if you could grow a hardy legume like field peas or vetches during the preceding winter season, but unless you have more than ten inches of water available there will not be moisture enough remaining to make a summer crop of black-eyes. However, from what you say it is possible that enough moisture would be supplied by underflow from adjacent irrigated lands. This is a matter which can only be determined by actual experience.

It is certainly the fact that winter growing legumes, cultivated for the retention of moisture, would leave the ground in better shape for a summer growth of black-eyes than it would be after a crop of oats had been grown, for a crop of oats or other grain would bring moisture to its minimum. The continued growth of legumes would have the tendency to enrich the soil. How long it would take for the removal of potash and phosphorus cannot be definitely determined. It might be 50 or 100 years.—EDITOR.]

DIPPING PRUNES.

To the Editor: I have a formula for dipping French prunes. How should it be changed for dipping Sugars and Imperials?—READER, Woodside.

ANSWER BY ANDERSON & BARNGROVER MFG. CO.

As far as the prune dipping is concerned, the general method of dipping prunes is to make the solution strong enough to thoroughly check the skins of the fruit. There is no set rule for any particular prune, as different varieties of fruit and different locations require different strengths of lye. An important feature in prune dipping is to keep the water at the boiling point.

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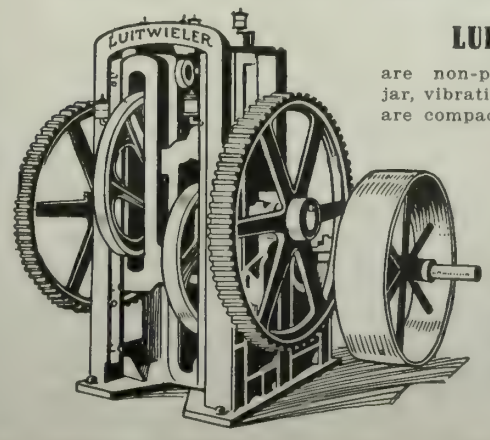

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Constructive Agriculture—No. 33.

HOW TO SPREAD PEAR BLIGHT.

[Written for the PACIFIC RURAL PRESS]

"Pear blight is badly spread in pruning," says Joe Green of Courtland.

"My pears will soon be off now and as soon as I can, I'll cut out the blight, then irrigate, and then prune. In pruning, I give each man about a gallon of coal oil in a bucket that he carries with him. At the end of the pruning of each tree, he dips his saw and shears into the oil, which penetrates every pore and kills all germs. He is likely to have cut through some blight without knowing it, and he has probably spread it about that tree, but the disinfection of tools for every tree prevents its spread over the whole orchard.

"Pear pickers stand on the limbs and in the crotches and bruise the bark with their shoes. That makes a capital place for germs to fall, in the fog and rain drops later in the season. It is hard to get them out of the crotches of big limbs without butchering the tree," says F. M. Broker, of Sacramento.

"Letting horses pasture in a pear orchard spreads the blight. They bite the bark and leave the cambium exposed for bacteria laden moisture drops to fall on. Bark knocked off by the whiffletrees and cultivators makes a good chance for blight to start," says another.

"House flies carry it wherever the juice exudes. Besides this, they pick it up from blighted prunings allowed to lie on the ground where the germs are protected by the glassy surface of the drops of gum until moisture softens the drops and makes the germs available to all insects," says B. J. Jones of Maxwell. "The infection probably always occurs through abrasions, but these may be so small that they are not readily seen. We have sprayed bacteria cultures over tender growing shoots apparently sound, and secured 75% infection. It is easy to see that flies could infect them at any time."

"Belated blossoms are a special source of infection," says Howard Reed of Sacramento. "They continue to open from blooming time until November; and their very scarcity subjects them to multiplied attacks by bacteria-carrying insects. Belated blossoms should be religiously cut out all season. You cannot detect all of the blight on a tree trunk unless you scrape off all the rough bark.

"Planting pears on alkali land invites pear blight. They will be so susceptible you cannot control the disease. Rich land and over-irrigation force out the abundance of soft shoots which make the best breeding ground."

"Thrips and bees are special agents in spreading the germs. One orchard I know of contains 600 stands of bees, and the neighbors for miles around have their orchards spotted with blight. The exudate is sweet and I have seen bees working on it," says Ernest Gammon, of Courtland.

"Neglect of wild pear and apple trees in pastures, abandoned orchards and along the road will insure the necessity of a constant fight for the life of orchard pear trees," says another.

"Winter Nellis does not seem to be seriously injured even though it may be more or less affected. But a diseased Nellis makes a good source of infection for all other commercial varieties," says Prof. W. T. Horne.

"If you want pear blight right, just get a bunch of cheap careless men to cut it out of your orchard. They will spread it with a vengeance. Or if you have good men, give them weak corrosive sublimate in a bottle and let them disinfect their tools with little sponges tied onto their wrists," says Joe Green, of Courtland.

Growing alfalfa in an orchard hides the root suckers which are early prey to blight spreading insects. Once entering these suckers, the blight works quickly down to the roots, and the tree is "condemned already."

RULES FOR MEASURING ALFALFA HAY.

To the Editor: Is there any rule for measuring alfalfa hay in the stack?—SUBSCRIBER, San Jose.

ANSWER BY MILLER & LUX, SAN FRANCISCO.

The rule most generally in use for that purpose, so far as our experience goes, is known as the Government rule and is as follows: Multiply the length of the stack by the width; deduct the width of the stack from the over-measurement of the stack [The over-measurement meaning the distance from the base on one side, over the top to the base on the other side. —EDITOR.]; and divide the remainder by 2; multiply the quotient of this by the product of the length times the width.

The result is supposed to represent the number of cubic feet contained in the stack. Divide this by 512—the estimated number of cubic feet per ton —and the quotient will represent the number of tons in the stack.

We cannot vouch for the accuracy of this rule, as it will vary according to conditions and particularly according to the length of time that the stack has been standing.

ANSWER BY G. R. WALES, MILFORD, LASSEN COUNTY, CAL.

The most satisfactory rule here for measuring alfalfa hay in the stack is to take the over-measurement of the stack; that is, the distance over the stack from the base on one side to the base on the other side, and which we call the oval. One-third of the distance over the stack is allowed for the height of the stack: for instance, if the over-measurement is 45 feet, we call it 15 feet in the square, and multiply the width by it, then multiply the length of stack and divide by 512, the number of cubic feet per ton.

As an illustration, suppose that the stack is 24 feet wide and will square to 15 feet; 15 times 24 equals 360 cubic feet in each running foot of stack. If the stack were 60 feet long, we would multiply 360 by 60, giving us 21,600 feet. This divided by 512 gives 42.21 tons in the stack.

[In Circular No. 131 of the Bureau of Plant Industry, the following figures are given regarding the number of cubic feet in a ton of hay: The average number of cubic feet per ton of hay in 55 stacks which had been standing less than 30 days was 589.6; for 30 stacks which had been standing 30 to 60 days, the average number of cubic feet per ton was 581.5, while the average for 7 stacks which had been standing from 74 to 155 days was 514.9 cubic feet per ton. These measurements were mostly made with timothy, or a mixture of timothy and clover in which timothy predominated. As it is well known that timothy is heavier than alfalfa, the figures given by Mr. Wales and by Miller & Lux when compared with the above experiments seems to be about right as to the number of cubic feet to the ton. From these experiments you can get a fairly accurate idea of the difference in weights at different periods of time the hay has been stacked.—EDITOR.]

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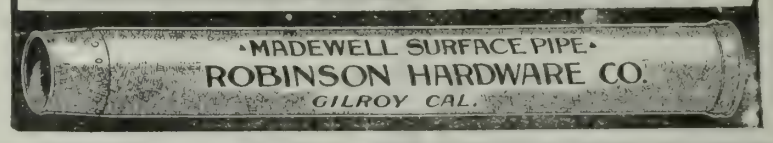

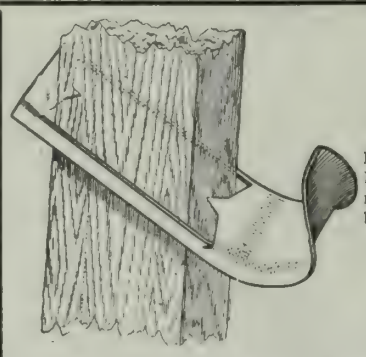

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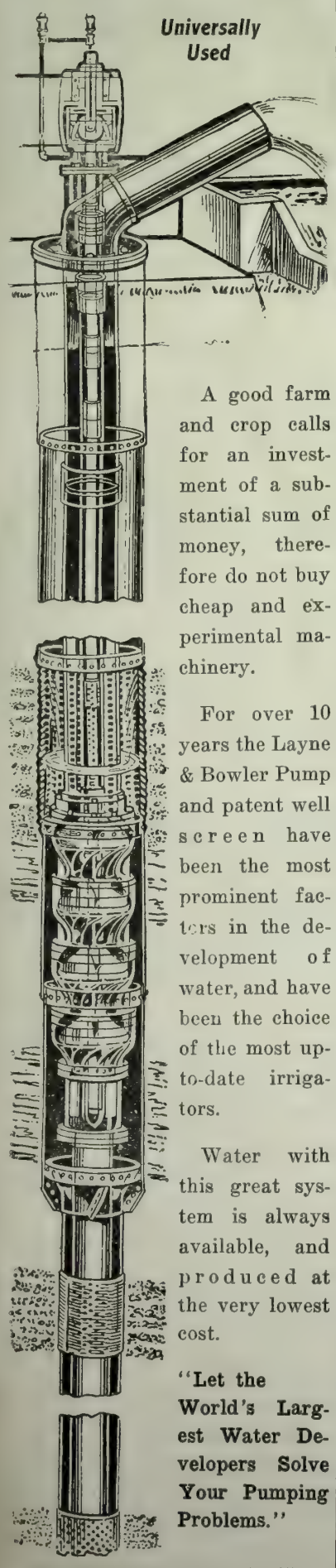

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THE PIG AS A GARDEN ATTACHMENT.

The importance of the cottager's pig has inspired poets and economists, but we are apt to forget it just the same—especially in a new country. It is, however, suggestive and refreshing to read a new account of the pig from the old sod:

"Begin by buying one pig about eight weeks old, or, if there is a fair-sized garden and a household of five or six people, start with two pigs. The spring—March, April, May—is the best time to buy them, as they grow very fast in the summer months, and there is so much from the garden to help them along. If possible do not buy grain for them till six weeks, or two months before you propose to kill them. In December and January there is a good demand for pigs, and they should be ready then.

"When you are thinning spinach, turnips, carrots, give the pigs the thinnings; also the tops of the vegetables when they are trimmed off for sending into the kitchen. Potato haulm, pea haulm, after they have been picked over any green, will be trampled down for manure. Sow-thistles and many weeds may be given to the pigs. Bedding is sometimes rather an expense. In Somerset and Devon one generally uses bracken, always locally spoken of as "fern." This can generally be had for the cutting. It should be cut when green in July. I have used dry leaves kept stored under cover; also I have saved all the straw from packing cases, and where there are horses, used the best and dryest of the stray manure from the stables.

"My accounts show the pigs have always made a profit, and besides this, what can you get out of your garden unless you have manure? And in pig manure you have an excellent one. It is very rare to find a Somerset laborer in the Quantock district without a pig; he would consider his garden almost worthless to him otherwise. Generally he has two pigs; the miller will usually let the account for feed run on till the pigs are killed. Then one pig is sold and it pays for the food of both, and something over. The other pig is cured by the man, or his wife, and keeps his family in bacon and hams for a year. The crooks which hold the bacon rack are a feature in most of these cottages. The oaken salter, which will hold the whole of the pig when cut up, is generally owned by one of the richer laborers, and is hired out at 1 shilling each time.

"Now to go back again. The pigs bought in the spring will generally eat cabbages and all the usual waste from the house, but if they are rather small, buy a sack of sharps and give them a little every day mixed with water, until they begin to take other food readily. The great thing is to keep them growing. If they can have the run of an orchard or paddock, so much the better, but be sure and have them ringed first. It is surprising how much grass they will eat and the exercise does them good. If you have cows and make butter, skim-milk is one of the best foods for them. When you start fattening them, don't let them have a free run, they will now begin to spend their time mostly in eating and sleeping. Some cinders thrown down in their yard twice a week, if they have not a large run, will keep them in health."

CRACKS AND BLEMISHES ON APRICOTS.

To the Editor: Under separate cover I am sending you a sample of apricots and prunes that are badly scabbed and cracked. Most all apricots and prunes in the Prunedale district of Monterey county this year are in a condition similar to this sample.

I would like to know if it is shot hole fungus that is affecting this fruit, or any other fungus? The climate here is very cool, with plenty of heavy, wet fogs that leaves the fruit and trees dripping wet. Most all the scab appears on the upper side of the fruit, where it is most exposed.

Is it the damp atmosphere that causes the fruit to crack so badly, or is it fungus?

Anyway, can the fruit be kept clean by spraying. A neighbor of mine claims he sprayed early this season with lime-sulphur solution, and the apricots I send are from his trees. They as a rule appear highly colored, and small in size and 75% scabbed as shown.

A good many people here are setting out apricots and I wonder if it is profitable if the fruit is likely to be scabbed and cracked as this year shows. —C. J. Richey, Watsonville.

COMMENTS BY PROF. W. T. HORNE.

The specimens of apricot and prune sent by Mr. Richey show more than one trouble. The large cracks which look like more or less deep, clean cuts on the fruit are due in all probability to seasonal conditions and not due to any fungus or active outside agent. This trouble appears, I am informed, very frequently in the coast district and is doubtless connected with the moisture conditions, or the alternation of fog and sunshine which you speak of. There is presumably nothing which can be done to improve this defect, and it can be expected to be quite severe some years and others to be of very small importance.

There are also small, definite scab spots on the fruit, both on the apricot and prune. I have examined these and have consulted the literature and most of our people here who have worked with apricots and I am unable to tell you definitely whether these small scabby spots are due to a definite fungus. I think it probable that they are due to some fungus, but am not at all certain of this. I understand that Mr. Ballard, of the United States Department of Agriculture, who is stationed at Watsonville, has carried out in past years some quite careful experiments in spraying apricots, but that he was unable to prevent some of the spots which form on the fruit; so that I could not tell you whether this small scabbing can be prevented by spraying or not. I am under the impression that the scabs are not the same trouble for which Mr. Ballard was particularly planning his work.

The only help which I am able to give you in connection with determining whether it will be profitable for you to grow apricots in your section is to suggest that you inquire of your neighbors or people who are growing apricots in situations as nearly like yours as you may be able to find, and inquire of them what their success has been and how their trees and fruit behaved. W. T. Horne.

University of California, Berkeley.

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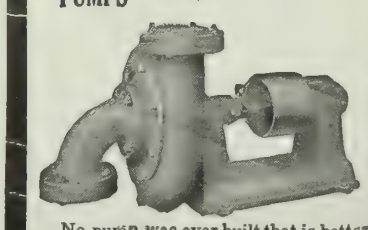

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AGRICULTURAL REVIEW.

Special Crop Reports.

In a letter to this office, Geo. B. Weatherby, county horticultural commissioner of Humboldt county, says, that prospects for the apple crop there are favorable with considerable larger crops than last year. This is due to the fact that scab and aphis troubles have not been as serious as in past years. Peaches have born heavily and prospects are for a considerable increase in peach acreage this fall and winter. Pear prospects are for a rather light crop, they having been affected quite badly with scab.

J. E. Adamson, of Pomona, states that orange prospects in that section are, that the navels will about equal last year's production, Valencias will be short about 25%, and seedlings and miscellaneous varieties about the same as last year. Lemons he thinks should pick fairly heavy in November, the crop for the next two months being better than last year. Apples are in some cases double that of last year, and are as a rule a heavy crop. Peaches are plentiful, the cannery there now running to full capacity, but threatened to close on account of European war, with its effect on transportation.

Prune harvesting has commenced in Yolo county, according to G. H. Hecke, county horticultural commissioner of Yolo county, who writes that the crop will not exceed former estimates. So far such prunes that are split, and are ripening prematurely, are harvested and he notices that for the lack of sugar, they are drying away and shrinking more than usual, but it is hoped that the remaining prunes will get on normally. Table and raisin grapes are promising good crops, although peaches are less satisfactory. Olives in that section are not going to be as plentiful as last year, he says, in some places not showing more than half a crop. As to what the effect of the European war will be he says, that it is evident that on crops that have been imported to some extent the price will go up, and that on farming products, which have been largely exported, the price will be likely to go down.

Writing from the Fair Oaks section, of Sacramento county, Geo. E. Fetters states, that the almond crop there will be about 75% of a normal one. Some of the nuts seem to gum and split, while immature, and the kernel is gummed when the nut is opened. The red spider has also bothered some. The crop is now being harvested and hullers say that the crop is about 75%. Peaches are fully 100% of a crop. Oranges in that section are looking well, the trees being well loaded and the fruit of good size. The water supply has been satisfactorily handled this year so that the outlook is for a normal crop.

Although the majority of the apple orchards in Riverside county are not yet at a bearing age, D. D. Sharp, horticultural commissioner of Riverside county, writes, that the trees could not promise better than they are in the mountain sections of that county. There is a fine set of lemons this season he says, and the trees are looking fine. As many of the trees were severely pruned after the freeze, they have not as yet attained their normal size or production. The orange crop there is very indefinite, at this time, the bloom being very uneven and the tree growth remarkable where the trees have been well cared for and properly pruned. In some places the fruit is completely hidden by new foliage. In many ways the frost has been a blessing, as the grower was compelled to prune in a manner that the trees had needed for years, and they also plowed the groves in a way that was badly needed. The result has been a healthy wood growth, large heavy leaves and a good setting of fruit, of desirable sizes.

G. E. Merrill, writing from San Jose, says that cracked prunes will cause considerable loss in that section, as packers have notified their clients that cracked prunes will not be accepted. The apricot crop in that section has, he says, evidently turned out better than it was expected to. Many growers have more fruit than they sold, and under present market conditions the packers will take no more than they have contracted for. The packers are also requiring well cured fruit, free from slabs, and the grower finds more trouble getting his fruit accepted this year than usual, as the percentage of slabs is very heavy, much fruit becoming too ripe before it was cut.

Deciduous Fruit Notes.

In direct contrast to the reports coming from Fresno last week, packers there have announced this week, that while it was thought that the war would force the price of figs upward, and that quotations at that time were 4½ cents, as yet no unusual demand has developed and as a consequence buyers are only paying 4 cents a pound. It is thought that this year's crop will amount to 6500 tons which is the largest since 1910, when the crop totaled 5500 tons.

Fruit harvesting has been under way in Sutter county for a couple of weeks, reports from there stating that peaches have proven a big crop and that all varieties of grapes will be a big crop.

Apple picking was started in the Pajaro valley last week, in some sections. Bellflowers are considerably earlier than usual and the crop is said to be of fine quality. Prices are not firm, due to the unsettled condition of the fruit market.

Provided the present weather continues, it is thought that peach drying around Chico will be finished by the latter part of next week. The weather so far this year has been excellent for drying, in that section.

Elbertas are past the shipping stage for eastern shipments from Modesto. One farmer has been offering them at ½ cent a pound and some farmers are feeding them to the hogs. Lovells are coloring now. The Ceres cannery is offering $27.50 for clings.

Prunes in the McKinley district, of Santa Clara valley, are said to be of fine quality. Harvesting is now under way.

The cannery at Newcastle, which has been idle for several years, has recently changed hands and it is thought that it will be reopened next year.

A report from Lodi, is to the effect that the American Pure Food company expect to have their syrup factory at that place in operation by the middle of next month. This factory will utilize waste fruits.

A dispatch from Anderson, Shasta

"I am unalterably opposed to the universal eight-hour law to be submitted by initiative petition."

Francis V.

KEESLING

Republican Candidate for

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On the subject of the universal eight-hour law, a vital issue before the agricultural, viticultural and orchard interests of California, Francis V. Keesling says:

"Wherever a law limiting the hours of labor to eight can be enforced to the betterment rather than the injury of the men, women and industries affected, then it should apply. I am unalterably opposed to the universal eight-hour law to be submitted by initiative petition.

"It will not only work tremendous injury to the people it is designed to serve—the laboring men and women—but it will virtually destroy the great agricultural, viticultural and orchard interests of California, now burdened to the breaking point with excessive taxation and the penalties of ill-considered laws enacted at the behest of demagogues."

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county, states that pears are being shipped from there to the canneries and that prune harvesting will be commenced about the first of next month. The report says that there is a falling off in the pear crop on account of the blight.

Peach picking and drying is now under way, around McFarland Tulare county, the crop being of good quality and large. Imperial plums are also ripe and almond harvesting will start about September 1.

Two new fruit packing houses were started at Parlier, Fresno county, last week.

Canneries at Visalia have about finished the freestone pack for the season, which has been remarkably heavy. It is predicted that the cling season will also be very good, although not so heavy a pack is expected as has been the case with the freestones. It is predicted that this year's pack will reach a combined total, in the two canneries, of 250,000 cases.

Grape Growers' Doings.

At a meeting of the trustees of the Associated Raisin company at Fresno, last week, manager James Madison declared that the association had sold a sufficient amount of raisins, at prices which will enable the company to cancel all obligations. Orders continue to come in and shipments are being made rapidly.

Reports from the wine grape vineyards, around Yuba City, are that most of the grapes have been sold at prices ranging between $10 to $12 a ton. Shipping grapes will make a good yield in that section and the Thompson seedless and Muscatel vines are heavily laden.

After inspecting a great many vineyards in Kings county, B. V. Sharp reported to the supervisors of that county, that in his opinion the grape crop will only average 75 to 80% normal. The vines have not yet overcome the dry years. Vine hoppers have been plentiful but spraying has been successful.

Estimates have been made in Fresno that shipments of Malagas will average 75 carloads a day, from now on until the first of September.

Green fruit shippers in Dinuba have either stopped or are slowing up on the shipping of Malagas, as the market is reported broken.

The Associated Raisin company have started stemming the 1500 tons of carry over crop of raisins still in the big warehouse at Reedley.

Vegetable Crop.

Watermelon prices in the Lodi and Manteca sections of San Joaquin county, have been extremely low the past week, some growers receiving as little as $2 a ton. Many growers are turning hogs into the patches.

Following a meeting of the directors of the Lima Bean Growers Association last week at Ventura, the price was advanced from $5.15 to $5.50 a hundred pounds. Growers became excited at the advance and several large crops have already been contracted for at that price. Many consider that the raise in prices is purely speculation, as the crop is later this year than usual and no one can tell what the outcome will be.

The first tomatoes of the season were put up by the Manteca cannery last week, the fruit having been shipped from Woodbridge and from the island section of San Joaquin county. Tomatoes are not yet ripe around Manteca.

The watermelon crops around Visalia have been harvested, for this season. The crop this year was said to have been larger than ever before and prices were, as a rule, satisfactory.

J. R. Foster, of Yuba City, has a 14-acre field of Garvanza beans, the seed of which was imported from Spain and Portugal. He is now harvesting his crop.

I. N. Cable, manager of the Berry Growers' Association at Sebastopol, estimates that the total tonnage of berries in that section this year, will amount to 2615 tons, divided as follows: 75 tons of strawberries, 90 tons of raspberries, 550 tons of Loganberries, 700 tons of Mammoth blackberries, and 110 tons of Lawton blackberries.

Citrus News.

In a statement made by A. L. Andrews, of Oroville, he said that while there has as yet been little planning done, there will be an orange and olive show held in that place about the first of December.

Reports from San Fernando say that some optimistic lemon growers of that section are predicting that if the present war continues, the price of lemons will soar. The present price is about $6.50 a box.

The plant of the International Fruit Products company of California, has been moved from Santa Ana to Riverside, and will be ready within two weeks to begin the manufacture of citrus by-products. Cull oranges and lemons will be used, from which citrate of lime and resinol will be manufactured. Until the manufacture of these articles was started in California the supplies came from Europe. The product is used extensively at all soda fountains.

Olive Happenings.

A representative of the American Olive Oil company at Oroville, states that the olive crop of southern California is short this year, but that the crop in Butte county now promises to be heavy.

Prof. W. F. Oglesby, of the University of California, stated on a recent trip through Sutter county, that in his opinion a large part of the land in that county is ideal for the growing of olives and that while the olive is still in its infancy there, he believes that they will play an important part in the future.

H. H. Madden, of Oroville, who has been in the Auburn district of Placer county for some time, states that he finds the olive orchards in that section in excellent shape and considers the soil and climate there ideal for olive growing.

Irrigation News.

The work of repairing the break in the Davis dam, of the Turlock irrigation district, was finished last week and water was expected to be turned in by August 14.

The general superintendent of the Oakdale irrigation district has announced that at least two and perhaps three more irrigations will be available, for farmers in that section.

Notices have been sent out that a convention of the Inlands Waterways Association of California will be held at Stockton, September 24, 25, and 26. Matters of great importance will be taken up and invitations have been extended to all individuals, counties, towns or irrigation districts, who are interested in irrigation to attend.

Farm Adviser Notes.

The newly appointed farm adviser of Madera county, T. C. Mahew, has arrived in Madera, and has taken up his duties, sharing the office of the county horticultural commissioner at that place

R. R. Mack, farm adviser for Kern county, has recently assumed his duties there, having arrived from San Diego county where he was busy for some time, familiarizing himself with the practical details of his job.

A campaign has been started by the Chico Development Asociation for the establishing of a farm bureau in Butte county, and the appointing of a farm adviser.

General Farm Crops.

Since the purchase of 30,000 pounds of hops recently, at Santa Rosa, at 15½ cents a pound the market at that place is showing signs of renewed activity and 16 and 16½ cents was being freely offered last week.

The yearly shipments of seed from Hollister, have started in a small way, part of the seeds going to San Francisco, while part of them are being sent direct to eastern points.

The hop picking season was started on the Durst ranch, near Wheatland, last week, and the yield is said to be large.

Thousands of tons of barley and wheat are being received daily at Stockton, the most of it being stored in warehouses, although some is being shipped direct to Port Costa.

Since the starting of the European war, the selling of the Imperial valley cotton crop has assumed new aspects, as there are no quotations available. Steps have been taken by the growers to get some aid from the government in harvesting the present crop.

The Anaheim Sugar company last week closed a contract for 400 bags of sugar beet seed. As most of the beet seed is raised in Austria and Russia, it is thought that the supply for American growers this year will be very small and as a consequence the price has been advanced to a very high figure.

There has been some talk of reopening the Alameda Sugar company's plant, near Meridian, since the raise in price of sugar on account of the European war.

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Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

TREES AND NURSERY STOCK.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside. Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

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FOR SALE—Gas Tractor, 4 cylinder, 7½ inch diameter, 8 inch stroke. Will do the work of 32 horses. Good as new. Address C. H. Jensen, 502 E. Weber ave., Stockton, Cal.

Alfalfa or Barley Hay of excellent quality, either 1913 or 1914 crop. Will exchange for hogs or dairy cows. Address William Rasmussen. Esparto, Cal.

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A GOOD RANCH—The Ansel Litchfield ranch, at San Joaquin river bridge, is offered for sale by his administrator; Southern and Western Pacific pass through the property; no better farming land in the valley; produces well without irrigation; abundant water on property; adapted to fruit or alfalfa; 337.11 acres; price $33,711; this property is worth much more than the price asked. C. B. Younger, Santa Cruz, Cal.

320-acre well-improved farm will be sold cheap if sold at once. 640-acre stock and dairy ranch, well improved and well watered. Will sell 50 head of cows and young stock with or without the ranch. For particulars write C. P. Gould, Box 27, Parkfield, Monterey county, Cal.

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For Sale—By owner, 5 a. partly improved land, orchard, vines, 3-room house, barn, etc. Unfailing well and 2000-gal. tank and tank house; joins laid-out town. Also 20 a. of unimproved land. Address Box 38, Trigo, Cal.

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It pays to keep bees on the farm; raise your own honey, make considerable profit besides. We can supply gentle Italian bees at $3.50 for five-frame colony, $5 for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. SPENCER APIARIES CO., Box 12, Nordhoff, Cal.

The Holstein in Its Native Land.

[Written for the PACIFIC RURAL PRESS by HAROLD MCALISTER, Chino, Cal.]

The Friesian people, from the earliest historical accounts, dwelt in Holland between the river Ems and the middle arm of the Rhine, and made cattle-raising their chief occupation. Their history commences about 300 years before the Christian era.

About 200 years later the Batavians came down the Rhine and settled near the Friesians. They were also breeders of cattle. Caesar speaks of the Friesians and Batavians as using cattle in traffic with each other and giving them as dowry to their children. Tacitus, another Roman historian living at about the beginning of the Christian era, states that "They owned cattle not excelling in beauty but in number. Some of these cattle were white and were held in religious veneration."

When coming under Roman government the Batavians furnished a continent of soldiers to the Roman army, but the Friesians paid an annual tribute of cowhides and meat, preferring the raising of cattle to the honors of war.

With Roman dominion came the extension of diking and draining of the land and improved methods of feeding and management of cattle. Immense structures were built mainly for the shelter of the herd. Professor Hengerveld states that the buildings of the present day are but imitations of the ancient Roman villa and that the methods and purpose of breeding cattle has also essentially remained unchanged. They also retain the name Friesian and their province is known as Friesland. They still use the old Friesian dialect in intercourse with each other, although Hollandische is the official language of the province.

The cattle have remained of the same essential stock and have been used for practically the same purpose since the earliest times. This remarkable preservation of the Friesian people and their cattle in their unadulterated state for over 2,000 years is one of the wonders of history.

While the conflicts and ravages of war have raged about them, the Friesians have kept to their original home and occupation undisturbed by any outside influence. Two hundred years is the most that can be claimed for the purity of any breed of cattle, yet here is a heritage going back for over twenty centuries without any admixture of foreign blood.

Prof. W. J. Fraser and R. E. Brand, in Illinois Experiment Bulletin 140, state that "a poor farmer is seldom found, as the life of the Hollander has been devoted to one subject—dairying—and his education has been such as to make him appreciate the importance of thorough, careful methods. Everywhere as far as eye could reach the landscape was thickly dotted with fine cows. A more beautiful dairy scene could hardly be imagined.

"Only a few of the choicest bulls are kept for sires, and the greatest care is also exercised in selecting females; first in the sire then in young calf, and then in performance at the pail. Not until the cow answers this satisfactory is she accorded a permanent place in the dairy. Registered cows are worth from $120 to $200.

"Winter grain consists almost entirely of oilcake, fed only to the heavy milkers in quantities of from 2 to 4 pounds a day. The principal feed, however, is hay, each cow receiving nearly 30 pounds daily. It takes the great capacity of these cows to handle such a large quantity of roughage.

"Holland is often called the cow's paradise, and it well deserves the name. A cow stable is as clean and carefully cared for as any other room in the house. The family frequently occupies a portion of the stable itself. In several instances the dining room was at one end of the stable and either a sewing room or kitchen at the other end. In one stable a polished tea-kettle occupied a stool at each stall and the partitions between the stalls were covered with fine rugs. Small semi-circular windows in front were draped with lace curtains. The stalls for the cows were decorated with plates, copper tea-kettles, and wood carvings.

"She supports a population nearly twelve times as dense as Illinois. Here is a country where land is worth from $500 to $1000 an acre and in many cases, naturally, no better than much of our Illinois land. Yet these people pay their rents or interests on investments by producing butter and cheese, which they place on the European markets in successful competition with that produced in America on land of less than one-fifth the value. They do this in spite of the fact that they cannot produce the amount of digestible nutrients per acre that we can with either corn or alfalfa. The secret of their success is efficient cows, excellent care, co-operation, and superior quality of butter and cheese."

The farmhouses of the Hollander are all on the same order, resembling a great castle and surrounded by a broad deep ditch, impassable except by some artificial means. Over the ditch are thrown one or more bridges, guarded by strong gates, with heavy bolts. The immense roof of the farmhouse covers everything that requires protection. Here the cattle find shelter during the long and rigorous winters. Here they are fed and watered for months without being turned from the doors. Everything is kept with a degree of neatness marvelous to those not accustomed to such a system. The cattle become the pets of the household. At the opening of spring, when the grass is sufficiently grown, they are taken to the fields and cared for in the most quiet manner. There is always plenty of shade in the pasture to keep them cool, nad they are blanketed in the temporary storms of spring and autumn to keep them warm. The pasture is very luxuriant and they acquire the habit of making the best possible use of large quantities of roughage. On the first appearance of winter they are returned to the stables again and allowed to remain there until spring. Their object is always to produce as much milk and beef as possible from the same animal.

With this twofold object in view, selection, breeding, and feeding have been continued by a whole race of farmers for countless generations. There have been no Bates or Booths or Collings, as of the Short-horn or Hereford breeds, to develop the race. There have been no men of remarkable genius that have risen far above their fellows in the work of improvement, but each breeder has contributed his share without special recog-

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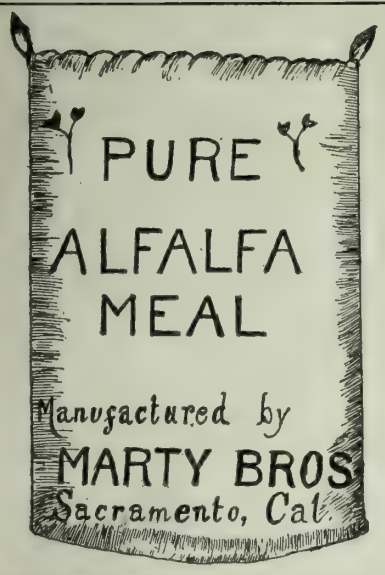

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Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly.
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EXPERT LIVE STOCK AUCTIONEERS
Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.
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HOWARD CATTLE COMPANY
BREEDERS AND IMPORTERS OF SHORT-HORN CATTLE.
85 New Montgomery Street, San Francisco.

nition. Unlike the breeders of the Channel Island breeds who have strongly inbred to fix the characteristics of the race, the Hollander never permitted inbreeding. Unlike the American breeders, they have never produced distinct families of marked superiority, although differences of soil in different localities have produced different classes varying in size and slightly in other characteristics.

The Hollander is a special-purpose farmer, devoting practically his entire attention to dairying. They are mostly tenant farmers, paying from $15 to $20 an acre rent for the land. The farms are usually of very small size, from ten to fifteen acres, and this intensive system of farming has made the Holstein especially adapted to fertile, densly populated countries. The soil is mostly of a rich clay type, calculated to produce cattle of large size and deep flesh. The climate is cool and moist, and the grasses succulent throughout the summer and fall, exceedingly favorable to large and continued milk yields. It is very probable that the climate, soil, and food of Holland had more to do with bringing out the breed characteristics of the Holstein than the Hollanders themselves.

Prof. I. P. Roberts, of Cornell University, New York, states that in Friesland he did not see "what might be called a poor or an old cow. These quiet people having no common-sense and universal method, long since formed a distinct breed of cattle that surpasses in their locality all others so far as tried. Jerseys have been introduced, but cannot secure a footing. Few bulls are kept and these but two or three years at most, when they are sold to the market for beef.

"These bulls are selected with the utmost care, invariably being the calves of the choicest milkers. But little attention is paid to fancy points or color, though dark-spotted is preferred to light spotted. More attention is now being paid to color in order to suit American customers. All other bull calves, with scarcely an exception, are sold for veal, bringing about one and one-half times as much as with us.

"In like manner the heifer calves are sold, except about 20 per cent, which are also selected with care and raised on skim-milk. The age of the cow is usually denoted by the number of calves, and in no case did I find a cow that had more than six calves, usually only four or five. The rule is to breed so that the cow's first calf is dropped in the stable, before the dam is two years old, in order that extra care and attention may be given.

"The cows, no matter how good, are seldom kept till they become worn-out shells, valueless for beef and not fit to propagate their kind, but are sold for beef while they are vigorous enough to put on flesh profitably alike to producer and consumer, and of no mean quality. I ate it for three weeks and the English beef for two, and while not so fat as the Short-horn, it was to my taste superior."

There is probably no people in the world that have the love for their cattle and their occupation as the Hollander. From the earliest childhood they are brought up with the deepest respect for their vocation, and this quality is handed down and strengthened from one generation to another. Everything centers around the herd as the failure or success of the Dutch dairymen depends on keeping up the

HOLSTEIN-FRIESIAN BULLS
Having sold three of our dairies we are offering for sale at a sacrifice
5 REGISTERED SERVICE BULLS and 4 REGISTERED BULL CALVES
Prices on Application.
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ASK YOUR DEALER FOR
EL DORADO COCOANUT OIL CAKE
for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
EL DORADO OIL WORKS,
149 CALIFORNIA STREET, SAN FRANCISCO.

standard of their cattle. They cannot afford in that country of high-priced land and feed to keep a poor cow as in America.

So dependent is Holland itself upon dairying that the prosperity of all business conditions rises and falls with the price and amount of butter produced. Such conditions have not come up recently, but we find even as far back as 1350 a French historian saying that "At a certain siege the besieged could only receive their supply of butter from Holland, which had been famous for its dairy products for five hundred years."

In the seventeenth century the historian Motley says of Holland that "On that scrap of solid ground, rescued by human energy from the ocean, were the most fertile pastures in the world; an ox often weighed 2,000 pounds, the cows produced two and three calves at a time, and the sheep four and five lambs. In a single village 4,000 kine (cattle) were counted. Butter and cheese were exported to the annual value of one million dollars, salted provisions to an incredible extent. The farmers were industrious, thriving and independent."

From Holland the breed has spread to almost every country on the globe. Though known under many different names in the different countries, and in some states, somewhat modified by the change of climate and soil, the Holsteins have always preserved their distinguishing breed characteristics and have never failed to improve the native cattle with which they were mingled. As many as 154,911 cattle have been exported from Holland in a single year to improve the stock in other countries. The Secretary of State in 1883 reported that "From the shores of the North Sea came the breeds of Holland, Schleswig, Holstein and Jutland, all remarkable for their milking qualities."

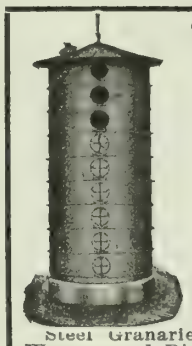
MAKE DRAINS WHILE THE SUN SHINES.

[Written for the PACIFIC RURAL PRESS]

Now that crops are about off and the soil is dry, drainage time has come. In Placer county winters, he who attempts to cross low places often drops suddenly over his shoe tops in a quicksand-like mud.

This is due to an oversupply of water which drives out soil air, prevents nitrate-forming bacteria from their soil-fertilizing work, keeps the ground cold in spring, and drowns ordinary crops.

Drain tile have worked in some of



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Lisle M'f'g. Co. Dept. 3, 625 Third St., San Francisco Cal.

these places two or three years when they had to be dug up and cleaned of dirt and roots of grass and trees. Usually they weren't cleaned in time and the soil suffered.

On H. N. Leak's orchard near Penryn, some 200 feet of drainage was placed in the winter. Within two weeks, a considerable section of the orchard which had been a quagmire, was dry enough so a man could safely walk anywhere in his Sunday shoes.

This drain is made of 2x8 pine plank six or eight feet long, nailed troughwise with little blocks to hold the plank a half inch apart at the angle. This crack permits ingress of water from above; for the troughs were laid upside down in the bottom of a ditch dug 18 inches to 3 feet deep to and into the soft granite bedrock which underlies that section. If laid on soft dirt, it might soon fill in from beneath, as much of the water enters the drain from that direction. To avoid rotting, the troughs were previously dipped in a tank of crude oil.

This would seem unnecessary, however, by N. B. Lardner's experience. He has similar drains six or eight hundred yards long put in 25 years ago, made of 1x6 boards 12 or 14 feet long, without oiling and without the crack at the angle. The joints were covered with short boards. This system is still working satisfactorily.

With the Live Stock Men.

The herd of grade Holsteins owned by the Oak Grove Dairy Farm of Woodland, was sold last week to the State Hospital at Stockton. Mr. Armstrong, manager of the Oak Grove Farm, will discontinue his dairy and will confine all of his efforts to the raising of registered Berkshire swine. With that end in view he has left for the East where he will purchase a carload of the best Berkshires available in the middle western States. These purchases will make the Four Oak herd one of, if not the largest, herd of registered hogs in the State.

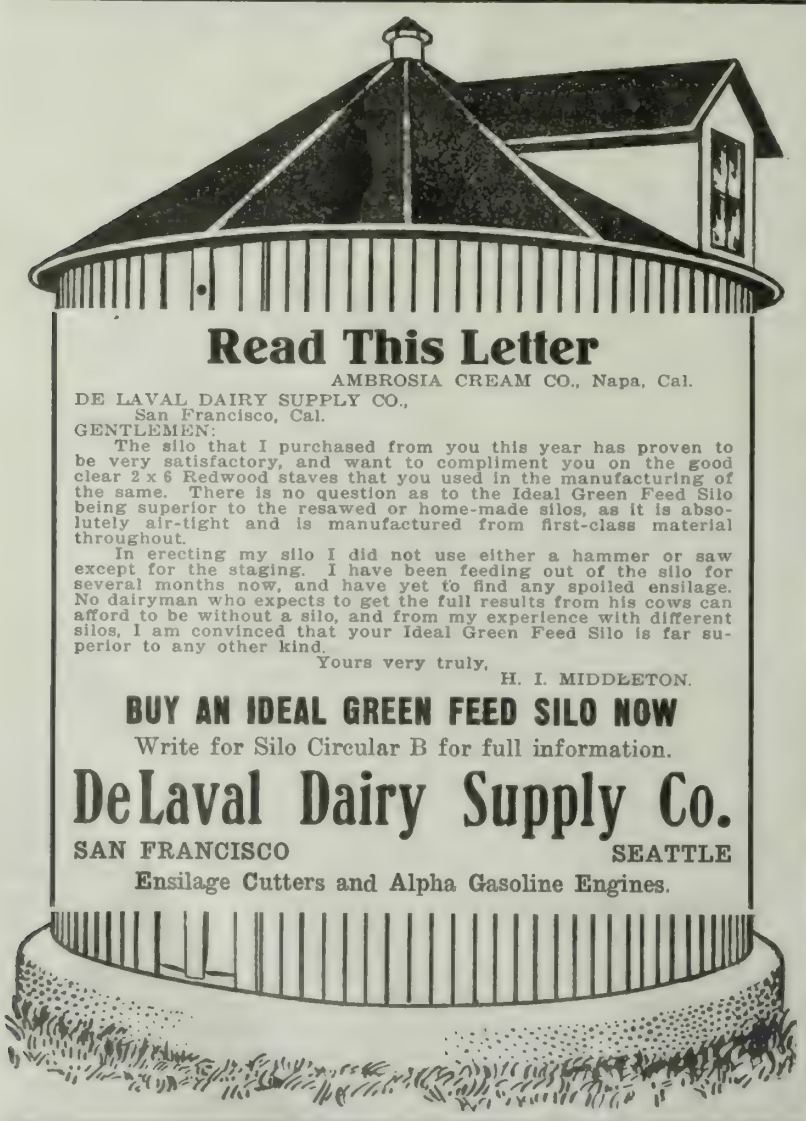
Farmers in the vicinity of Arbuckle, Colusa county, are looking for all kinds of live stock to consume the immense amounts of hay and wild feed in the tule sections of that district. Buyers are reported to have made recent trips into Oregon in the search of hogs and one rancher is now in Nevada looking for sheep.

In the July report of the Tulare Cow Testing Association, it is shown that 700 head of cows were tested, besides a number of cows which were officially tested by the association's tester. The highest average test of any herd entered, was made by a grade Jersey herd, the 12 cows making an average of 27.2 pounds. The highest individual test was made by a grade Holstein who produced 50.1 pounds of butter fat.

Experiments have recently been made in the vicinity of Fallon, Nevada, which seem to indicate that the heavy losses of cattle, experienced there in the past few years has been largely due to poisin hemlock, a plant that abounds along the sloughs and other low levels of Nevada. Poisin hemlock strongly resembles the wild parsnip, and it is now thought that much of the supposedly anthrax and blackleg of the past, has been nothing more than poisining by the hemlock.

A report from Hanford, states that Geo. A. Smith, of Corcoran, Kings county, has just purchased the herd of registered Holsteins owned by F. B. Glenn, near Willows, Glenn county, and that he is also considering the purchase of the Mullick herd at the same place. These two herds are the largest herds of registered Holsteins in Glenn county and there are many good individuals numbered among them.

Seven members of the Woodland High School Agricultural Club, and four members from the Esparto club, will exhibit their hogs at the coming State Fair. This contest is open to all high school agricultural clubs in the



Read This Letter

AMBROSIA CREAM CO., Napa, Cal.

DE LAVAL DAIRY SUPPLY CO.,
San Francisco, Cal.

GENTLEMEN:

The silo that I purchased from you this year has proven to be very satisfactory, and want to compliment you on the good clear 2 x 6 Redwood staves that you used in the manufacturing of the same. There is no question as to the Ideal Green Feed Silo being superior to the resawed or home-made silos, as it is absolutely air-tight and is manufactured from first-class material throughout.

In erecting my silo I did not use either a hammer or saw except for the staging. I have been feeding out of the silo for several months now, and have yet to find any spoiled ensilage. No dairyman who expects to get the full results from his cows can afford to be without a silo, and from my experience with different silos, I am convinced that your Ideal Green Feed Silo is far superior to any other kind.

Yours very truly,
H. I. MIDDLETON.

BUY AN IDEAL GREEN FEED SILO NOW

Write for Silo Circular B for full information.

DeLaval Dairy Supply Co.

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We have the Agency for the BEST Mechanical Milking machine on the market. 3 carloads of these machines are in our salesroom. We want you to see our practical demonstration of this Milker. If you will send us your name, we will mail you a booklet on milking machines, and other dairy supplies.

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Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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ROYAL JERSEY HERD—Offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers' & Merchants' National Bank.

FOR SALE—100 head of good dairy stock. Best milking cows in this locality. Call or address A. Ghisletta, Duncan Mills, Sonoma county, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warder herd bulls, both sired by $17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEY BULL for sale; ready for service. H. M. Barngrover, San Jose, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS — Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg Jersey Bulls for sale. R. 4, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Short-Horns. Prices on application. Hopland, Cal.

REG. HOLSTEINS—Bull calves, Juliana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS — A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

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N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

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FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

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BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder. "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

REGISTERED POLAND-CHINA HOGS —Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS — No better anywhere. Boars, sows, and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

FOR SALE—Young Berkshire sows and boars from registered stock. Brae Bourne Ranch, Route 3, Box 69, Santa Rosa, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

POLAND - CHINAS—Fifteen head 11 months gilts, open or bred, of prolific kind. Geo. V. Beckman, Lodi, Cal.

BERKSHIRES—Utility and choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompsan, Novato, Cal.

YOUNG REGISTERED BERKSHIRES —Boars and sows. Reasonable prices. Enterprise Farm, F. C. Cuthill, Newark, Cal.

POLAND-CHINAS. Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

THOROUGHBRED DUROC - JERSEY weanlings for sale; Colorado King on Kansas Sunflower stock. M. Manson, Bellota, Cal.

REGISTERED POLAND-CHINA SWINE —Prize winners, finest stock in State. $30 p. M. Bassett, Hanford.

PURE-BRED BERKSHIRE BOARS for sale; ready for service. H. M. Barngrover, San Jose, Cal.

DUROCS from first-prize winners State Fair, $15.00 up. Ed E. Johnson, Turlock, Cal.

MULEFOOT HOGS are best by any test. Jno. Dunlap, Box 416, Williamsport, Ohio.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE —Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

DUROC-JERSEY BOARS — Weanlings. Lindquist Bros., Turlock, Cal.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

PURE-BRED DUROC-JERSEY PIGS. E. CURTIS, Napa, Cal.

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HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

SHIRE HORSES—Stallions, mares and colts of the best breeding, both imported and home-bred, for sale at reasonable prices. Henry Wheatly, Salvador Stock Farm, Napa.

FOR SALE—Span large young mules; also few young horses; cheap for cash. T. A. McCune, Blacks Station, Yolo County.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS — Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Shorthorns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa.—Registered Berkshire hogs and Jersey cattle.

State, but so far only those from Yolo county have been entered. Later judges will decide who is the winner in the pig contests of each school, and the winner will be given a free trip to Washington, D. C.

An agent of the Southern Pacific company, reports the loss of 400 head of sheep near Amedee, Modoc county. The sheep were thought to have been poisoned from grazing on a bush with a purple blossom, said to resemble sage brush.

The Mt. Diablo Park company, with headquarters near Danville, Contra Costa county, sold 65 head of mules to the government last week, for use in the army. The price paid was not given.

The Exeter Creamery Association, of Exeter, Tulare county, expect to have their plant ready for operation by October 1. Machinery for the plant has been ordered and the work of installation will begin at once. It is thought that the plant will be thoroughly modern and up-to-date.

The owner of the San Miguel island, near Santa Barbara, has recently purchased several thousand young carob trees, which will be grown with the expectation of securing much valuable feed for the large amounts of sheep which are maintained on the island.

Prices eased off some on cattle, toward the end of the week, at the Portland Union Stock Yards, last week, the run for the fore part of the week being quite heavy. Extreme tops for the week on steers was $7.35, bulls $4, calves $8 to $8.25. Prices were fully up to those of last week on top grades of cows and heifers and the outlet was good. A strong demand and light receipts continued in the hog market, the top for best light hogs being $9.50, medium grades bringing $9.25 to $9.35. Receipts for sheep and lambs were also light, there being a good demand for choice grades. Prime wethers sold for $4.75 to $4.85; prime ewes for $3.85 to $4.15; medium ewes $3.25 to $3.75, and spring lambs $5.50 to $6.

DATE FOR HOLSTEIN SALE SET

To the Editor: The leading Holstein breeders of the State met at Hanford, August 4, for the purpose of arranging for a breeders consignment sale to be held October 29 or 30, 1914, at the fair grounds, at Hanford.

The leading business men of Hanford met with the Holstein breeders and gave them a banquet at the Hotel Kings. They offered all the assistance that they could for making the sale a success. Mr. Bernstein and Mr. John Ross were the principal speakers. Others spoke also.

Those present to consign cattle were: A. W. Morris of Woodland; R. F. Guerin, of Visalia; James W. McAlister, Jr., of Chino; T. J. Gilkerson, of Stratford; and J. H. Hewett, of Hanford.

One hundred Holsteins, all ages, all first-class animals, will be sold. Mr. Ben Roades, of Los Angeles, will be auctioneer. The breeders expect to have a consignment sale each year, this being the first, and hope to make a success of them, always putting in the best stock so the people wishing to start with registered Holsteins can have good foundation stock to choose from. R. F. GUERIN.

Visalia.

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Registered Ready for Service

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HOPLAND STOCK FARM.

Hopland, California.

VETERINARY QUESTIONS.

[Answered by DR. E. J. CREELY, San Francisco Veterinary College, San Francisco.]

CALVES AND SEPARATED MILK.

To the Editor: Will you kindly let me know if there is any danger in feeding separated milk to calves? I have fed mine separated milk with meal, sometimes linseed, and sometimes Blatchford's calf meal, and they have had well cured alfalfa also. Four have died suddenly from a violent bloat that even sticking could not relieve. I have brought up a good many calves on the same diet with the exception of the use of skim milk instead of separated. In using the separated milk the foam has always been carefully removed. Can you help me out of the difficulty?—A. L. W., Barstow.

This is not due to separated milk, but is more likely to have been caused by unclean milk vessels, which had a fermentable foci. I would advise you to cleanse the vessels after use, in ½% solution formalin, and use vessels without corners or crevices.

FORMULA FOR IODINE, RINGBONE ON COLT.

To the Editor: Will you kindly give me the formula of iodine, for use on horses and various other things, that I can mix at home myself? The kind one buys at the drug stores is very expensive and seems to be about nine-tenths alcohol. I cannot afford to buy it when I have to use such large quantities of it. Also one of my colts has a hard growth, just above the hoof on the hind leg. Sometimes it goes lame for a week or so but most of the time it is alright. It has been that way ever since it was a little colt. We are sure it was an injury in the first place. Today there is a swelling on that part. What treatment would you suggest?—L. K., Yountville.

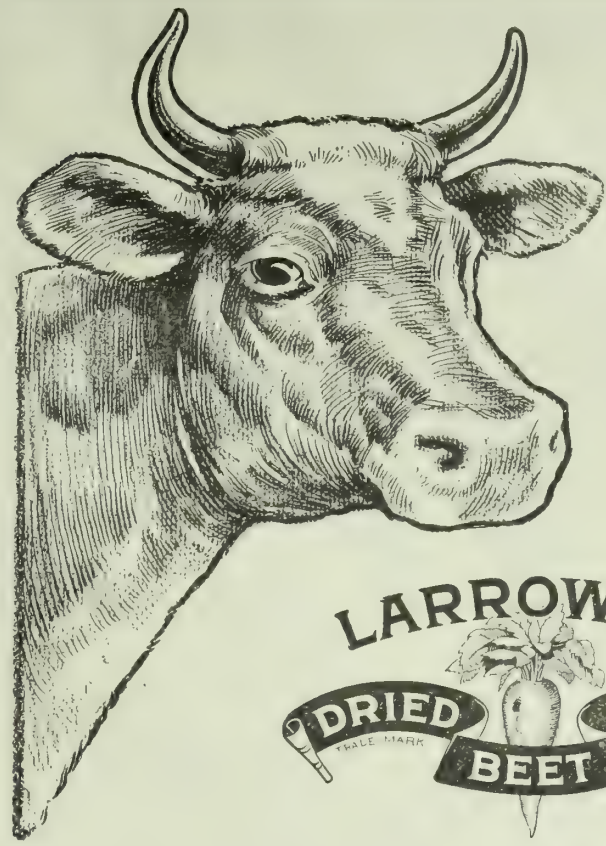
The formula that I use for tinct. iodine in my hospital practice is as follows: Iodine potash, 112 grains; crystals iodine, 224 grains; grain alcohol, one quart. Mix.

Your colt has a ringbone, due to an injury and should be fired and blistered by a graduate veterinarian. He should use a needle point iron so no blemish will remain after the operation.

MILK FEVER.

To the Editor: Please enlighten me on the following matters: One morning about 8 o'clock one of my cows gave birth to a calf. The cow was a pretty good milker, giving last year nearly 7000 pounds of milk. She was about 10 years old and in fine condition. I noticed that she did not seem quite so lively and bright as usual. A friend that happened to visit me just then, mentioned that an old farmer in Nebraska once told him that he always used to give the cows some of their own milk after calving, and that they then cleaned promptly. I had never heard of this remedy before, but thought that it would do no harm to try it, so after the calf had sucked the cow, I milked out about a quart or so and let the cow drink it. Sure enough she cleaned in a little while, but did not seem to relish the food when I gave her some bran and tepid water. The following morning she was evidently sick and during the forenoon she commenced to stagger and fell. I suspected milk fever and went after a neighbor who had a bicycle pump. He used this means to pump air into the udder, since I had milked it clean. We tied strings around the ends of the teats to keep the air in, and let it remain a couple of hours or more. Then I milked it out and we filled the udder the same way with air, repeating the procedure once more in the late afternoon, every time washing the pump in an antiseptic solution. We also gave the cow a couple of doses of Epsom salts, but they had no effect whatever. The cow lay mostly on her side and turned her head toward her stomach, until she became too weak to even do this. She was not swollen, but her legs were paralyzed. She showed most of the symptoms that are described in books as milk fever. Some think that she should not have died so soon with milk fever, 38 hours after calving, and that she should have shown signs of distress and not have been so quiet. Was it this disease, or what else could it be?— E. S., East Sound, Washington.

This is milk fever pure and simple. You did not use the air treatment properly or else the cow would certainly have recovered. All communities not having a graduate veterinarian should write to Haussman & Dunn, South Clark St., Chicago, Illinois, and get the proper apparatus. The chances are that too much air pressure was used, doing directly the reverse from what was intended.



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Sheep From Butchers' Standpoint.

[Written for the PACIFIC RURAL PRESS]

The most profitable part of sheep raising for the small farmer is in the production of meat, rather than the production of wool, according to one of the largest mutton packing houses in San Francisco, and while it is natural to suppose that such an authority would be interested in advancing the mutton industry, his views and figures should be of some value at this time when the agitation favoring sheep on the small farm is keen.

To illustrate his point he showed us a string of dressed lambs. These lambs were three months old when butchered, being black faces or mutton type. Their appearance showed them to be prime stuff, as they were nice plump carcasses and the kind that all good retail trade demands.

Alongside of this prime stuff was a string of Merino wethers, about the same size as the black faced lambs, although much older and at a glance one could see that they were much inferior to the black faced lambs as a foodstuff, also that they did not weigh any more, if as much.

The reason for this was that the Merino has been bred primarily for wool, while the black faces had been bred for just the opposite purposes and naturally killed out better carcasses.

Coming back to the demands of the retail trade we were informed that San Francisco has a reputation of being a great mutton eating city, for the simple reason that butchers have made it a point to furnish the trade with lambs, instead of old ewes and wethers, as is done in most large cities with the result that the meat eating public in those cities take a dislike to the meat on account of its stronger flavor.

Another factor favoring the butchering of lambs is that the hind quarter, which is a very popular part of the carcass, is much smaller in the lamb than in the older animal and the average housewife wants the smaller sizes in order to provide against having one kind of meat for several days.

From the cooling rooms he proceeded to the tanning department, which while a side issue of the plant, aids in increasing the ultimate price paid the producer. Here he showed us the difference in the hides of a wool sheep and a mutton sheep.

The hides of the mutton breeds were nice and smooth and all of the hide made good strong leather while those of the wool breeds contained many flaws due, it was said, to the wrinkles in the hide which when pressed down made weak places in the leather.

Coming back to the farmers point of view he went on to show the comparative returns from a hundred head of both kinds.

According to his figures the 100 head of Merino ewes would shear about 10 pounds of wool a year, which when sold at 15 cents a pound, would make a total of $1.50, less 20 cents a head for shearing, or a net return of $1.30. This flock would lamb on the average about 90 head and 70 per cent of that number could be raised and sold as lambs at about $3.50 per head, making a total net revenue on the flock of about $350.

While the black faces would not shear so much, his estimate being 7 pounds for the year, their wool would sell for about 18 cents a pound, making a total of $1.26, less 20 cents for shearing or $1.06 net. Figuring that the flock would lamb 90 per cent and that at least 90 per cent of them could be raised, would mean that 81 lambs could be turned off at a price right around $4 per head or a net income for the season of about $430.

It will be noticed in his figures that he has allowed a larger percentage of lambs from the mutton flock, than from the wool flock, and also that the mutton lambs are quoted at 50 cents a piece higher. It is generally admitted that a larger percentage of lambs are raised from the mutton breeds than the others as he had pointed out before the superiority of the mutton breeds for butchering, makes the increased price possible.

From the fact that many of the larger range men are crossing their Merino bands with Shropshire bucks, with surprising good results, it is reasonable to suppose that by the time the small farmer ventures into the sheep business as a permanent thing the right type will be established for meeting both the butcher and wool buyers standards.

HAULING MILK IN JACKETED CANS.

With continued agitation favoring the better care of milk and cream while in transit, it is interesting to note a series of experiments that have been made recently, by the U. S. Department of Agriculture.

In making these tests the cans were set in an open truck with no covering to shield them from the sun. The milk was hauled 13 miles in this way, the average air temperature being 82.65 degrees.

There were three different methods used in hauling the milk; first an ordinary milk can with no covering; secondly, an ordinary can having a wet burlap covering; and thirdly, a can having a hair quilted jacket.

The milk in the ordinary can with no covering, rose 28½° in temperature in three hours time, that in the burlap covered can rose 8½° during that time, and that in the hair-quilt jacketed can only showed an increase of 5½ degrees.

From these figures it is obvious that it pays to jacket the cans in order to maintain low temperatures during transportation, and that many of our creamery men are doing little if anything to keep the bacteria count down, after receiving the cream from the dairy.

NO STANDARD FOR PRICE OF COWS.

To the Editor: Please give me advice regarding the price of good grade Holstein cows.—READER, Fairmead.

[It is impossible for us to tell you the price of cows, as there is such a wide variation in prices asked. There is an old saying that each sale of cattle is a trade in itself, due to the fact that the price depends upon the quality of the animal in question, how badly the buyer needs her, and how badly the owner wants to sell. We might say, however, that present prices for such stock as you mention vary in price from $75 to over $100. We are setting a poor example in answering this as you neglected to sign your name to the communication, and that is one courtesy we require of subscribers in these columns, even though we do not as a rule print such names in full.—EDITOR.]

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One Thousand Questions in California Agriculture Answered

By EDWARD J. WICKSON, A. M.

Is made up of questions asked the PACIFIC RURAL PRESS by actual farmers and answered by Prof. Wickson. These queries and replies make a book of nearly 300 pages, bound in cloth, and is sent postpaid for $1.50 per copy. Every farmer should have this book, because problems confront him daily, which are answered in a concise way in this book. Every subject which interests the reader is easily found through the comprehensive index.

Pacific Rural Press

420 Market Street San Francisco

PUBLISHERS.

Sign-painter: "Now, Missus Johnsing, what does you want put on dis yer sign?" Missus Johnsing (after a moment of deep thought): "I guess 'Goin' out scrubbin' done in here' will do."—Life.

A Co-operative Achievement.

To the Editor: Noting your answer to H. E. Ordway (Socialist) in your issue of July 18th, I will state that the result described in the enclosed clipping from the Santa Ana Register of July 21 was brought about by the co-operation of the Yorba Linda ranchers. The promoters were not satisfied with the handsome profit they made on the sale of the tract of 3000 acres but illegally issued bonds for $175,000 which they were trying to make the purchasers of the land pay them interest on these bonds at the rate of 5 per cent. Without co-operation we never could have won this victory.—J. T. WHEDON, Yorba Linda.

THE ACCOMPLISHMENT.

The account which Mr. Whedon sends us shows that the settlement of what is called "the biggest case the courts of Orange county have had to deal with" was by stipulation, briefly as follows:

"The agreement sets forth that it is agreed that the defendants, Peter Janss, Jacob Stern, H. W. Frank, M. N. Newmark, acted in entire good faith and had no intent to defraud in their dealings with the purchasers of property in the Yorba Linda tract; that difficulties arose through 'unfortunate misunderstandings,' and that it is for the interests of justice that the case be settled.

"Further, it is agreed that the trust deed of the Yorba Linda Water Co. of its property and stock to the Los Angeles Trust & Savings Bank, which deed was given to secure the bond issue of $175,000, shall be set aside; that the bond issue shall be canceled; that within thirty days the defendants will issue water stock to all contract holders who have paid over 50 per cent of the contract price, which stock shall be turned over to the contract holders; that the defendants will issue stock to those who have paid less than 50 per cent, and that stock to be held in escrow.

"It is agreed that the present directors of the water company, Stern, Newmark, Frank, Harold Janss and Edwin Janss, shall resign one at a time, and shall put in their places Emory Albertson, George E. Parmenter, P. J. Stewart, E. K. French, and G. H. Barton, who are members of the Water Users' Association. All books and property of the water company will be turned over at once to the new board of directors. The suers accept the plant as it stands as sufficient, and agree to pay debts of the company, amounting to $21,074.20."

A LOVE FEAST.—When the agreement was complete the judge and the attorneys complimented each other, and Judge Thomas said this:

"I was impressed with the manner in which the Yorba Linda people conducted their meeting this morning. Had one dropped in from the outside they might have thought it was a church meeting. It was in that atmosphere that the compromise was considered. Attorney Farraher in his address to the water users very aptly said that the settlement as proposed was in accordance with Christian spirit. My first act as a judge was to open court with prayer, and I feel that this is an occasion in which we should offer thanks to God for the culmination in this way of this case. I ask your Yorba Linda pastor to lead us in prayer."

Rev. W. H. Bertram, pastor of the Friends Church, arose, offered prayer and thanks that joy has taken the place of gloom among the Yorba Lindans, that the great trouble that has cast a shadow upon this community had been dispersed. It was the first time in the history of the county that a prayer was offered in court for the settlement of a case.

THE SETTLEMENT.—C. H. Seamans, secretary of the Water Users' Association, one of those who attended every hour of the trial, which came to an end after three weeks of trial, stated this morning that the people of Yorba Linda are thoroughly satisfied with the result. In fact, satisfied hardly expresses their delight. He says a great load has been lifted, and the people are ready for a thanksgiving celebration.

In the settlement the water users had to concede some points. They lose the interest they have already paid on the bond issue. No additional expenditures were secured on the water plant. What they did gain of most importance was to rid themselves of the debt of $175,000 and to secure complete control of the water company forthwith.

[We would especially call attention to the entrance of true emotion into this event. If co-operative effort fails to reach the emotions it is not likely to succeed.—EDITOR.]

PROFESSIONAL DIRECTORY

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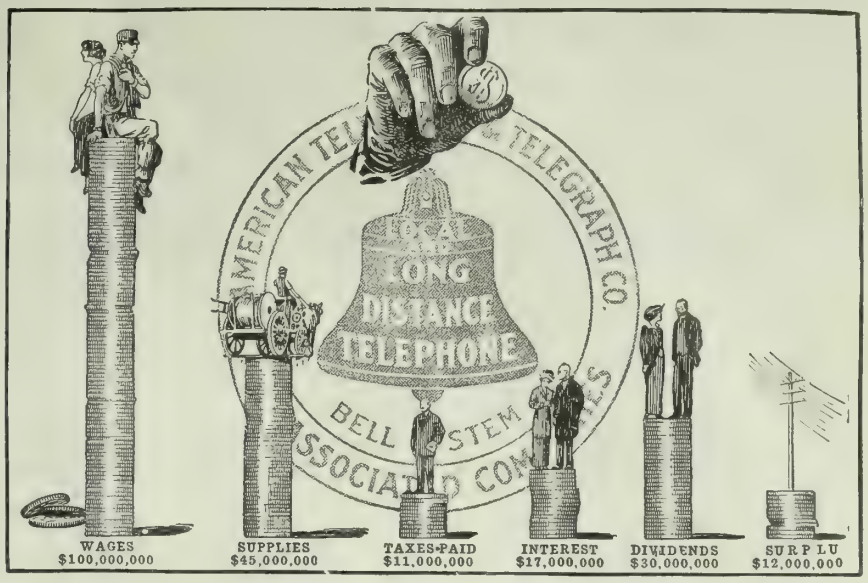
TREES AFTER VINES.

To the Editor: Some growers are removing phylloxerated grape vines and putting trees in same holes: saving expense of digging holes for trees. Would it not be better to put the trees between the rows where the vines were, where the ground has been cultivated, and would it not be still better to remove vines this fall, cultivate the ground thoroughly and in the spring sow to alfalfa, or burr clover, and leave for one or two years before putting out the trees? Which is the best and cheapest way to remove the vines? Do you advise blasting?—READER, College City.

[There is every reason to set the almond trees at points not previously occupied by the vines. Not only is there a chance of reduction of fertility at that point but what is more important, the soil has become hardened and has lost something also from the lack of aeration which cultivation promotes. If we were planting them between vines, we should plant midway between the rows but far better would be the complete clearing of the land and cultivation of some other crop for a year or two, especially if legumes are grown as you suggest. If not, then a crop requiring deep plowing and good summer cultivation such as peas or beans or potatoes would bring the land into better shape for tree planting. Still with deep working this delay in planting need not be incurred and especially in the case of the deep rooting almond one might expect the trees to reach to good soil below if there is not hardpan or standing water to limit their penetration.

The most rapid and satisfactory arrangement for pulling vines is what is called the "vine puller," made of a pair of strong wagon wheels with a long pole, four by six pine scantling 12 ft. long, with strong iron hook on one end. Allow the end with the hook to project 18 in. beyond the axle of the wheel and bolt the pole down to the axle. Hitch a short chain around the vine stump; hook into this chain by raising the long end of the pole; start the horse to pull down the pole which lifts the vine and it is dragged out as the wheels proceed.

If the soil is heavy or if there is hardpan beneath a loamy top soil, blasting is desirable.—EDITOR.]



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Every subscriber's telephone represents an actual investment averaging $153, and the gross average revenue is $41.75. The total revenue is distributed as follows:

Employes—$100,000,000
Nearly half the total—$100,000,000—paid in wages to more than one hundred thousand employes engaged in giving to the public the best and the cheapest telephone service in the world.

For Supplies—$45,000,000
Paid to merchants, supply dealers and others for materials and apparatus, and for rent, light, heat, traveling, etc.

Tax Collector—$11,000,000
Taxes of more than $11,000,000 are paid to the Federal, state and local authorities. The people derive the benefit in better highways, schools and the like.

Bondholders—$17,000,000
Paid in interest to thousands of men and women, savings banks, insurance companies and other institutions owning bonds and notes.

Stockholders—$30,000,000
70,000 stockholders, about half of whom are women, receive $30,000,000.
(These payments to stockholders and bondholders who have put their savings into the telephone business represent 6.05% on the investment.)

Surplus—$12,000,000
This is invested in telephone plant and equipment, to furnish and keep telephone service always up to the Bell standard.

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Teacher: "Did Columbus know that he had discovered a new continent?" Class: "No, he thought it was India." Teacher: "Correct. Why did he think he had found India?" Bright boy: "I s'pose it was 'cause the inhabitants were Indians."—New York Weekly.

Mrs. Peavish says that if it were to do over again, no man need ever ask for her hand until he had shown his.—Dallas News.

Selecting Poultry for Vigor.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Selecting stock for health and vigor is not going out in a yard and picking out the nicely feathered birds of mature growth.

Oh, no; it can't be done that quickly —selecting for vigor means watching the chicks from day to day in their growth and noting each little weakness. It is a continual method of culling until you get those that are absolutely sure to have a surplus of energy to impart to the next generation. When that happens, the method must still be employed, for even the best and most vigorous will break down if fed and treated wrong.

Lay the foundation by starting right; then you can build up as you go along in the fancier points. The well developed strong chicks mean more profits, for there is no profit in keeping a lot of sick fowls; make them keep you, and you have the matter on a business footing. There are too many people keeping chickens, and the only sensible way is to make the chickens keep them. They can do it. In Petaluma there are poultrymen with good bank accounts, all made by the right way of making the chickens earn their board and enough to pay for housing and feeding them. Then there are others that keep the chickens and go broke.

After selecting the strongest growing pullets, go after them again just before putting in the house where they are to stay, then again at the finish when the pullets are mature. A mature pullet will give you all the points you need for judging. By keeping only the strongest and most vigorous, you not only save money in feed bills, but the cost of housing weakly birds, the cost of medicine if they are attacked by any disease, and also the danger by exposure of your strong birds that should be making the money.

DON'T CHANGE THE FEED.—Changes in feed should be gradual, especially at this time of year. Feed extra green or vegetable foods, if you like, but don't change from one grain to another too suddenly; it upsets the digestive organs and hinders growth in young chicks. A little Epsom salts given once a week will help much in keeping the molting hens and growing chicks cool. Salts cools the blood and helps to expel worms; but for the latter a little wood ashes should be mixed in the same mash with the salts. A little flowers of sulfur once in a while helps to keep the blood supplied with an important element. Sulfur is to be found in the blood of all animals and man. Of course we, and they, are supposed to obtain all that is needful from the food we eat, but it does not always happen so, and a little extra on the side does good, especially at molting time and when young chicks are feathering. Also give the growing chicks all the buttermilk there is to spare, as it contains, in soluble form, many things needed for the well-being of the chicks and also for molting hens. Sour milk and buttermilk are both good, they are animal food and medicine chest together.

SMALL HENS.—Last week we touched on a story that is being spread anent little hens being the best layers.

In the American Poultry Journal we find an open letter to Mr. Patterson:

"Mr. C. T. Patterson, pathologist, Missouri State Poultry Experiment Station, Mountain Grove, Missouri.

Dear Sir: I understand that your station has been sending out material advocating a lighter weight type of chicken as a better laying bird. During the past two seasons, and again last year, you specifically state, that a good many Plymouth Rocks entered for competition were received in an immature condition, being immature at the beginning of the natural egg-laying season. A bird is thus forced into reproductive period (whether by heavy feeding of nitrogenous elements or the approach of the natural season) at a sacrifice of size and weight, which has perhaps led you to believe that the underweight bird is the egg-laying bird. This cannot be true, as at other experiment stations and in my own experience some hens that are over standard weight are splendid producers."

And yet, it is stated, that undoubtedly the American Poultry Association will be asked, at the Chicago convention, to reduce the standard weight of Plymouth Rocks.

There is a nigger hid in the woodpile somewhere; must be that some of these fellows with a big pile and a lot of swagger have let size go in order to get feather, and now aim to make it fashionable. It is sheer nonsense; for some of the best producers I ever owned have run over the Standard weights.

The reason for the small hen is fully explained in last week's issue. The egg-laying contests do not want birds over a certain age, and if they are not fully matured when they commence laying, growth, size, and weight are sacrificed for eggs. Nature looks after that part.

But what bothers me is that every fad must be aired and put out as gospel. A man has a right to his opinion, but he has no right to try to make out that he is infallible

If the Standard is to be changed to suit the whims of any individual that has an opinion, why it must reverse its claim to be a "Standard," and own up that it is "just as you like it." Breeders then could have a scramble for it and the best man win. But it is just like the European war, while we are mighty sorry, we can't stem the tide. I ate war grub when I was a little tot, so know something about it, and the poor children suffer as much, if not more, in war times as their parents do.

YELLOW CHICKEN FLEAS.—Is there any cure for fleas on chickens. They are a sort of yellow flea with wings. The chickens look sickly and gradually die, one by one.—Subscriber.

For fleas on chicks, dip them in a mixture of one ounce of creolin to two quarts of warm water, or if it is not convenient to dip them, get one ounce of oil of fennel and rub a little on the head and neck.

But if you do not stop the breeding of the pests it is very little use doing anything, because as fast as you kill one lot another will get on the chicks. Clean up all dirty nests, dark shady spots, rake up the refuse and burn it. Then make a spray, or get a can of Kreso Dip; this can be purchased at drug stores or feed stores; it is a sheep dip, and if used pretty strong will do the work. Spray the ground all around with salt spray, using one gallon of coarse salt to four gallons of water. Fleas don't seem able to stand salt, and neither do they like clean places.

WORMS IN GIZZARD.—My chickens do not seem to do very well. Upon examination, I find that inside the gizzard, not in the pouch, but in the flesh part, there are small wiry whitish worms. They seem to be worse in the spring hatched chickens.—Subscriber.

Only two kinds of worms are known to exist in chickens. One is the round worm, with head like a needle, pointed and white in color, varying in size, of course. And the tape worm, which anyone would know by its flat appearance. Hence we conclude your chickens have the round worms. In small numbers these do not appear to be harmful, but in large numbers it is quite different. Give the bird a dose of Epsom salts in a small quantity of mash, and if you can give each one individual treatment the cure will be quicker. For individual treatment beat up a fresh egg with two tablespoonfuls of "oil of turpentine" (mind "oil," not spirits, of turpentine. The oil is quite a different thing.) Mix the egg and oil of turpentine well by agitation and give a teaspoonful to each bird, night and morning, for three days, then a dose of Epsom salts, allowing half a teaspoonful for each chicken to be treated.

Santonine, two grains for each bird, dissolved in water, then mixed in a little mash into which has previously been rubbed castor oil, half a teaspoonful to each bird, and given to eat, seeing that each gets its share, is a good vermifuge. But if wood ashes are given once a week in mash and a little Epsom salts once in a while no worms will breed. All the droppings must be collected after these treatments and burned, or the chicks are likely to pick the worms out and swallow them again. Keep everything raked up. Pumpkin seeds or the old fashioned wormwood are also good, and garlic, either cooked or raw, will drive them out. Garlic is a good thing to grow, then you don't have to buy it.

DRIED MILK CURD FOR POULTRY.

To the Editor: I have about 75 pounds of skim-milk daily, more than I can use advantageously, not having

POULTRY BREEDERS' DIRECTORY

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BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds, and other varieties. Capacity, 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 396, Los Gatos, Cal.

PETALUMA HATCHERY—Now booking orders for Fall. August, September and October chicks are highly profitable. Send for circular. L. W. Clark, Petaluma, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, $7.50 per 15; utility, $2 per 15; $10 per 100. C. J. Struby, Concord, Cal.

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THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

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in the summer. Try our Complete System of Feeding as described in our free book, "Chickens from Shell to Market."

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FREE BOOK

Raising Calves without milk. Everything you need for stock and poultry raising. Write today.
F. F. SMITH & CO.,
1006 J St., Sacramento.

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FISH MEAT MEAL FOR POULTRY

Important

Always look for the star within the circle, and you will never buy an inferior fish meal.

Guaranteed to be the best egg-laying, health-giving meat food for poultry on the market today.

(Send for free sample and prices)

WESTERN TALLOW COMPANY
40 Beale St., San Francisco

any hogs. I am curdling it, then draw off the whey and dry the curd in the sun. Will the curd make good chicken feed, and what is its feeding value compared with good beef scraps or fish meal? Is there any feeding value to speak of in the whey drawn off?—G. A. P., Modesto.

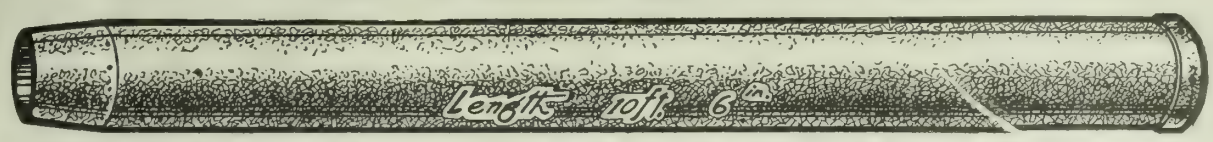
ANSWERED BY GEO. H. CROLEY, SAN FRANCISCO.

Referring to the inquiry of G. A. P., Modesto, will say that well cured meat scraps and fish meal are dried down until they contain only about 10% of water. Seventy-five pounds of milk dried down to the consistency of beef scrap, containing 10% of water, would weigh about eight pounds. Its feeding value would be just about the same as eight pounds of beef scrap, varying somewhat one way or the other, according to the other foodstuffs fed in connection with it.

To illustrate: The 75 pounds of milk dried down to eight pounds, containing 10% water, would be worth, at 3½ cents a pound, 28 cents, while eight pounds of beef scraps at 3½ cents per pound, would be worth 26 cents. Fish meal at 3⅛ cents would be worth only a trifle less.

His method of draining the whey and drying the curd in the sun is all right, but poultrymen as a rule claim that it is dangerous to feed the whey to poultry.

THE ONLY SCIENTIFICALLY CONSTRUCTED SURFACE
IRRIGATION PIPE
Is the AMERICAN
LOCK SEAMS WITHOUT RIVETS. NO ROUND SEAMS TO LEAK.



Will outlast any other pipe made—easily handled—best for irrigating alfalfa. (We make and recommend Riveted Pipe for underground use only.) Write for illustrated Catalogue, Irrigation Folder, and ask us "How to Test Pipe." Also manufacturers of ORCHARD HEATERS.

AMERICAN STEEL PIPE & TANK COMPANY
LOS ANGELES
Branch: 1228 "H" St., Fresno 354-56 Pacific Electric Building

CANDLE EGGS BY COLORED CHART.

To enable farmers and housewives to test eggs before a candle and tell accurately their condition before they are opened, the Department of Agriculture has just published a colored egg-candling chart. To give a true picture of the eggs, 12 impressions were necessary to produce this lithographed chart.

This chart shows the eggs in their natural size as they appear before a candle, and also as they look when open in a glass saucer. The pictures include an absolutely fresh egg, slightly stale eggs, decidedly stale eggs, eggs with yolks sticking to the shell, eggs where the chicken has developed so far that blood has been formed, moldy eggs, addled eggs, and eggs with a green white.

Comparatively few hosewives are aware that a green color in the white of eggs is due to the presence of billions and billions of a certain species of bacteria that make a green coloring matter. Eggs with this greenish tint, even though the yolks seem to be perfect, are not fit for food.

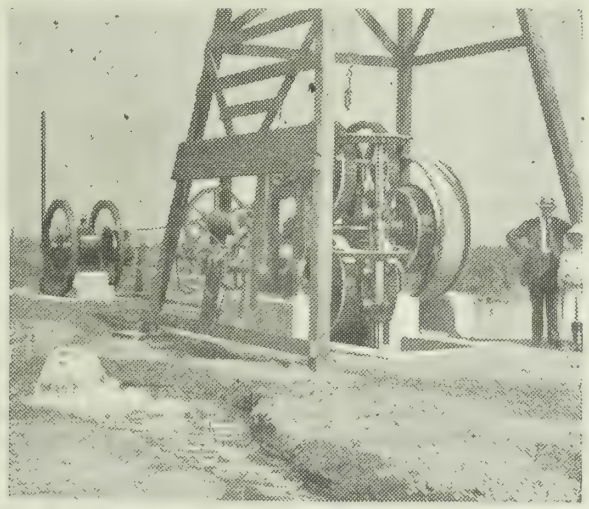
As long as the Department's supply lasts, these charts will be furnished free upon application to the Editor and Chief, Division of Publications. Commercial shippers of eggs, however, should apply for Departmental Bulletin 51, a technical paper on testing by scientific methods not available to the average farmer. This bulletin includes the colored illustrations. This chart alone will be found to be not merely of great service to the housewife wishing to test the eggs she is to serve to her own family, but also of commercial value to the farmers, country merchants, or egg shippers who wish to buy and handle eggs on an accurate quality basis.

The great spoilage of eggs in this country is due to bad handling and is quite unnecessary. Part of the remedy is to teach everybody, from the farmer to the consumer, how to tell the quality of an egg without breaking the shell. The country buyers, the middlemen and the housewife judge of the quality of the inside of a cucumber or an eggplant, or any other vegetable, by the appearance of the outside and the firmness of its texture. It is not possible to tell the quality of an egg by looking at the shell, though it is safe to say that the eggs with shiny shells are apt to be aged. A fresh egg looks as though it had been dusted with a very fine powder; the "bloom," as the egg men say. But in order to know what is inside the shell the egg must be held in front of a strong light—such as an electric bulb furnishes—which comes through a hole about 1¼ inches in diameter. The room must be dark. When the egg is held close against the hole the bright light renders its contents visible, and the quality is indicated by the appearance of the yolk, the white and the air spare at the blunt end. There are many egg "candles" on the market, but the housewife han easily make one for herself by cutting a hole in a small pasteboard box, which is slipped over an electric light bulb.

Plans have been perfected for the organization of the Tri-County Cow Testing Association, at Riverside.

Pomona Deep Well Pumps
THE BEST DEEP WELL PUMP IN AMERICA

This may seem like a very strong claim to make, but there are plenty of users in many States who will verify our claims in every respect.



This photo shows the pump and derrick of the Ritchie Plant, Ontario, Cal.

58 H. P. Pomona Pump Head; 12 x 110 Cylinder; 250 feet to water; 312 ft. to bottom of cylinder. Gives a 60-inch flow of water.

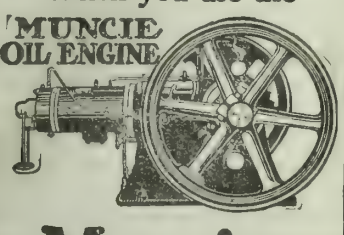
ASK ANY MAN WHO OWNS ONE

If you are figuring on installing a deep well pump we cordially invite you to come to Pomona and see our plant and talk with our irrigation experts. If you can't come to Pomona—write us.

Pomona Mfg. Co., Pomona, Cal.
Located in the Center of the Largest Deep Well Irrigation District in the World

We make a full line of gates and valves for cement pipe irrigation. The Pomona Patent Pressure Gate is the most popular gate in use anywhere.

Fuel Bills Cut Squarely in Two
When you use the MUNCIE OIL ENGINE



Muncie Oil Engine
The only engine from 20 to 100 H. P. successfully operated today in California on California fuel oil.
It's a wonderful engine—simple yet perfect—has no carburetors, battery, coil, magneto, gears or cams. It has only two essential attachments, the governor and the fuel pump.
CALIFORNIA HYDRAULIC ENGINEERING & SUPPLY CO.,
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129 N. Los Angeles St., Los Angeles.

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TEA & COFFEE at Wholesale Prices

60c Tea 45c	40c Coffee 33c
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MAKE THE TRIP In Less Time
BETWEEN
Sacramento
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FAST ELECTRIC TRAINS
Clean—Comfortable—Convenient.
Baggage carried on all trains.
Trains arrive and depart from Key Route Ferry.
SAN FRANCISCO, OAKLAND, ANTIOCH & EASTERN RY.

The Home Circle

To the Boys.

To whatever occupation you may be called as a means of obtaining a livelihood, determine to understand it well and to work heartily at it.

If you constantly look upon your employment as a mere drugery—as something which, while it must be done, may be done anyhow—depend upon it, you will always be a mere drudge. There are two classes of young men—those who work without thought and without energy, and those who throw both thought and energy into their work. The first do their best to keep themselves down; the others do their best to raise themselves up, and both in the end will reap just what they have sown.

Let your conduct be such as to insure the approval of those above you; resolve to learn everything that can be of service to you; let "quickly and well" be the mark at which you aim in relation to every business matter with which you are entrusted; and never forget that upon your diligence in youth will depend your success as a man.

Be careful as to who are your companions. "Tell me your company and I'll tell you what you are." Many a lad who has bid fair to grow up a respectable man has been wholly ruined by mixing with evil companions. The habits that some lads contract of resorting to public houses and frittering away their golden hours in smoking and drinking, have in thousands of instances laid the foundation for a disgraceful life, a wretched death, and a miserable eternity. Choose associates of a different character. If you would not only respect yourself, but have the respect of others, you must shun the very presence of those who, having no regard for their own character, would soon make havoc with yours.

Courtesy in the Home.

It is to be regretted that individual courtesy in the household is at so low an ebb. We treat our guests with favor and bestow upon them every mark of polite attention; but the minute they are out of the house we slip back into the old ruts, and treat those about us with an indifference that borders on contempt. Not that this is intentional; rather, it is the result of carelessness, a failure to realize that the polite attentions, "the little things," count so much to those we love as to some outsider who becomes a member of the family for a day.

If one would be a successful host one should be a successful parent or brother or sister, and courtesy is an inevitable requisite in both cases. The home life is a training for the larger life in which we meet other men and discuss other interests. If at home we learn to say "thank you," and mean it, we will not forget to say it to others at the proper time.

The little boy was waiting at the gate when the preacher rode up.

"Are you Brother Jones?" the little boy asked.

"Yes, my little man. Are you glad to see me?"

"You bet I am. Mamma'll cut the cake now."—Judge.

Home Work for High School.

In the Esparto Union High School the students get the scholastic credit counting toward graduation, for practical work done at home. Below are given score cards showing the way their home work is judged. These cards cover at least seven kinds of work and are furnished to the High School by the extension department of the College of Agriculture.

SCORE CARD FOR BUTTER

DISTRIBUTED BY

ESPARTO UNION HIGH SCHOOL

ESPARTO, YOLO COUNTY, CALIFORNIA

Smoothness	30
Consistency	3
Flavor	30
Color	10
	100

SCORE CARD FOR PRESERVES

Fruit—Shape	10
Clearness and color	10
Flavor	15
Texture	10
Juice—Clearness and color	10
Flavor	15
Consistency	10
Proportion of juice	20
	100

SCORE CARD FOR WORK DRESS

Choice of design, simplicity, attractiveness, ease of making, ease of laundering, fitness for purpose	60
Neatness in making	20
Choice of fabric	10
Choice of color	10

"Be sure you are right and then prove it."—Trumbull Cheer.

Educate the Boy.

We have our opinion of the farmer who takes his boys out of school just at the age when they are able to straddle a cultivator or strip a heifer. If you want your son to grow up with as noisy vacuum where his head ought to be, take him off his books and tie him to the plow-handle at 14 years. You may have a contempt for book "larnin'," but it won't be a sneer compared to the contempt the lad will have for you if he tries to break into one of the professions with the mental equipment of a spring lamb. You owe it to the boy to give him the best education your means and his brains will stand for. Deny it to him, keep his nose to the grindstone, get all you can out of him before he becomes a village loafer, and when they plant you on the hillside they will have to hire mourners from outside the family. The boy may have some pride, if you haven't, and when he mixes with educated young people, who have learned something besides how to splice a whiffletree or set a disc harrow, he will marvel at their acquaintance with books and men and topics which are as strange to him as a hobble skirt on a Hottentot. Then, too, the day has gone by, brother, when a six-ply ignoramus with a capacity for punishment in the hayfield makes the best farmer. It isn't going to feminize your son to know something more than the three R's. If he is the right sort, he won't look down on his dad, either.—H. L. Rann.

The Greek, Eratosthenes, 250 B. C., taught the doctrine of the rotundity of

Eilers Bungalow Player Piano

THE MOST MODERN OF ALL PLAYER PIANOS

Sweet-toned! Durable! Satisfying!

Small enough for a tiny apartment

Large enough for a big hall

Appropriate for any mansion

The Latest! The Best!

Plays every note on the keyboard

Eilers MUSIC HOUSE

HOME OF THE CHICKERING PIANO

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Your "silent" piano taken in exchange

$485

buys an Eilers Bungalow

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per week pays for it

For further information regarding the Bungalow Player Piano, cut out coupon and mail to us.

Eilers Music House
San Francisco

Gentlemen: Please send me full information regarding the Bungalow Player Piano.

Name .....

Address .....

the earth, and the ideas of the sphere, its poles, axis, the equator, Arctic and Antarctic circles, equinoctial points and the solstices were quite generally entertained by the wise men of that time. There were plenty of men in the east, therefore, who were prepared to talk about the earth as a sphere and to make globes illustrating their ideas.—Exchange.

One morning, just before starting to school, little Bobbie, aged six years, was watching his mamma put up his noon lunch. Suddenly he said: "Mamma, I wish you'd let Katie put up my lunch instead of doin' it yourself. Won't you?"

"It's no trouble, my dear."

"I know."

DRINK "QUALITY" TEA AND COFFEE

From IMPORTER to CONSUMER direct by PARCEL POST

"CHA-MA" - - - - 60 CENTS A LB.
A FAIR GREEN UNCOLORED JAPAN TEA

"RIP-GAR BLEND" - 50 CENTS A LB.
A DELICIOUS BLACK ENGLISH BREAKFAST TEA

"SEE-LOE BLEND" - 75 CENTS A LB.
OF THE CHOICEST BLACK TEAS IN THE WORLD
PACKED ONLY IN 1-LB. ABSOLUTELY AIR-TIGHT TINS

"E-CIL-A BLEND" 1 LB. 40 C; 3 LB. $1.00
A CHOICE BLEND OF PURE COFFEE
PACKED IN AIR-TIGHT PACKAGES
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FREE 1 Pr. BLANKETS
1 Doz. NAPKINS
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Send us an order for this entire list of household necessities and we will give you these three absolutely FREE. Value $10.00.

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FREE 1 Pr. Blankets	$6.00
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FREE 1 Doz. Dish Towels	1.00
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2 Yds. Table Cloth	3.00
1 Rag Rug, 27x54	1.50
18 x 54 Dresser Scarfs	1.00
6 Sheets	4.50
6 Pillow Cases	1.20
Total Retail Value	$30.00

SEND $20.00 AND RECEIVE $30.00 WORTH OF GOODS.

All goods guaranteed equal or superior to what you can buy for listed price elsewhere. If not entirely satisfied your money will be refunded. We pay all freight or express charges.

If you do not wish this entire list, any one or more articles may be had at 25 per cent less than list price. We pay express or freight charges on all orders $5 or over.

JOHN McDERMOTT & SONS
111-13-15 Winston Street,
Los Angeles, Cal.

References: German-American Trust and Savings Bank, R. G. Dun & Co. and Bradstreet's.

Aero-Gas

Why not use a safe and economical gas for lighting, heating and cooking.

Every householder can be supplied at small cost with an Aero-Gas machine—which makes from 800 to 1000 feet of gas from one gallon of ordinary motor gasoline.

These plants are entirely automatic, and bear an unexcelled reputation all over the world.

We supply and install plants, in any size to suit customers, at low cost and on liberal terms.

PLANTS FULLY GUARANTEED

Write for particulars to

Utility Gas Generator Co.,
340 SANSOME STREET
San Francisco Phone Douglas 2400

"Then why——"

"Cause, mamma, she's got a better appetite than you, an' she puts more in."—The August Delineator.

"Have you had any experience with children?"

"No, ma'am; I've always worked in the best families."—Philadelphia Public Ledger.

Our Young Folks

Lisa's Gift.

Along the mountain side and lower in the valleys the fresh green grass was springing up; so thick was it that Farmer Peter had said the cows must go down to the pasture, and the girls must begin again to take turns in taking them there. The farmer had five daughters, so one bright spring day Tessa, the eldest, took the cows along the road where tall, pointed cedars stood, down by great, gray rocks that seemed to form a wall between the firs and the grassy valleys. They went across a cold, clear mountain stream that a little farther on was caught in a hollow stone basin as a drinking place for the cows.

All the week Tessa would take the cows to pasture in the morning and bring them back at night, and, as she came slowly along after them that evening, she thought of the rich milk and cream that would soon be filling the milk pans at the farm and of the butter and cheese that later on they would take to market. As she stepped to the side of the road to hurry a lazy cow, she noticed a queer little green house that seemed to be built against one of the great rocks.

"I do not remember that house," she thought, and stopped to look at it more closely.

In front of the queer little green door sat a queer little man with a queer little green cap on his head.

"I was just wishing you would come this way," he said. "I want to ask you for a drink of fresh milk." Tessa drew back.

"No," she answered. "We cannot spare any of our milk, we need it all ourselves." And she ran on after the cows.

The next week Nannette took the cows to the valley. She, too, saw the queer little green house and the queer little man with the queer little green cap on his head, and one night she stopped. The little man bowed very low.

"You must make good butter from such a fine herd of cows," he said. "I have been wondering if you would give me a tiny bit to eat on my bread."

"No, indeed!" Nannette shook her head. "We sell our butter, not give it away; we have non for you," and she hurried after the cows.

When Blanchen went down with the cows, she looked for the queer little green house, but did not see it until her return in the evening; then she went very close to it. The queer little man with the queer little green cap sat outside as usual.

"Good evening, little maid," he said. "I found strawberries today where the sun shines warmly on the hillside, and would like to share with you if you could let me have a little cream for mine." But Blanchen tossed her head.

"I, too, can find berries on the hillside," she said, "and we use our cream to make butter, so I cannot give you any," and she followed the cows home.

"He must be a queer little man," said Anabel, the next daughter, as she came up with the cows the following week. "I must peep around the rock and see if he is still there."

Yes, there stood the queer little green house, and the queer little man with the queer little green cap sat in front. He smiled very pleasantly at her.

"I've been longing, my dear, for a bit of cheese. Could you spare me a little?"

But Anabel only turned and ran up the hill as fast as she could go.

"Indeed, he can't have any of my cheese!" she said to herself. "I wonder what he will ask for next."

The week following it was the turn of Lisa, the youngest daughter, to take the cows. She kept thinking of the stories her sisters had told of the queer little man. In her kind heart a strong desire had come to do something for him.

"The milk from my cow, Gretchen, is my own," she thought, "and I shall give him some." So on her way home from the pasture she slipped around the bend in the road, and there in front of his door was the little man. He looked at her kindly. Lisa smiled and held out a pail she carried.

"Here is milk from my own cow," said she. "I wanted you to have some and a bit of cheese from my lunch." The little man took off his green cap and bowed and smiled.

"My dear, you will not lose anything," he said. "All that one gives of good comes back in good."

"I wonder what he means?" thought Lisa, as she turned into the road that led to the farm, and she wondered about him all the way home.

The sisters laughed when she told what she had done.

"He's a little elf, I'm sure, Lisa," said Nannette. "Did he give you the wonderful lamp, and may I wish with it?"

"Tell us truly, dear," coaxed Tessa, "did he give you the cap of knowledge?"

"Let us see if she has the cloak that makes one invisible," teased Blanchen.

"Will he lend you his seven-league boots, Lisa?" asked Anabel.

Lisa laughed and shook her head; but the mother, overhearing said:

"Lisa has a pair of wonderful boots already, I think; for she walks into everyone's heart and that is the best gift of all."

Lisa wondered what kind of boots they were, but could not stop long to think about them, for it was a busy time at the farm. There were cheeses to be gotten ready for market, and butter to be packed, and the sisters forgot all about the little man. Lisa still had a big pot of cream to be churned.

"My butter must be ready to go with the rest," she said, and so she was up very early the next morning. She poured the yellow cream into the churn, put in the dasher and was soon churning away. The dasher danced up and down at first, but by and by it went slowly.

"I must have a lot of butter," said Lisa to herself, "it is so very heavy." She looked into the churn; yes, there were the yellow lumps, shining faintly through the white milk.

"But they're not floating as they usually do," thought Lisa, very much surprised. Taking her ladle she hurriedly slipped it under one of the lumps and, raising it, put it in the wooden bowl of cold water that stood ready to wash the milk from the butter. It sank quickly under the water, and Lisa turned it over with her ladle. It was hard as a stone, not a bit like the soft lumps of yellow butter she was used to working over. Her eyes filled with tears and she ran to find her mother.

"Come quickly, mother!" she exclaimed, "the butter has come, and it isn't butter at all! I'm afraid I have not done it right!"

Her mother looked very puzzled as she took out the yellow lumps, but when the father came, he smiled.

"What has my Lisa been doing?" he asked. "Getting acquainted with the fairies? This is surely fairies' gold, a love gift from the little people."

"Nay, father; I have seen no fairies," declared the astonished Lisa. But a slight noise at the door made them all turn, and there stood the queer little man with his queer little green cap in his hand, bowing and smiling in the doorway.

"All that one gives of good comes back in good," he said. Then he disappeared, and no one ever saw him again; and, though Blanchen, Nannette, Anabel, and Tessa all ran to look for the little green house, it had disappeared with the little man. But the gold did not disappear, for fairies' gold always lasts as long as a giving heart, and Lisa had found the secret.

If you hoard with selfish greed,
And forget another's need,
All your gold will turn to clay,
And will vanish quite away;
But, if you with some one share,
You will find it everywhere.
This the secret fairies told,
When they left their gift of gold.

—Margaret S. Van Der Veer in the Churchman.

A-C-C COFFEE

A PURE COFFEE OF RICH FLAVOR AND STRENGTH

3 lbs. in air-tight tin for $1.00

delivered postpaid to any address within 150 miles of San Francisco, or $1.10 delivered within 600 miles.

Buy direct and save money.

The Anglo-Ceylon Co.
244 California Street San Francisco

The Stephenson Patent Cooler

NO ICE REQUIRED.

Perfect ventilation.

Absolutely sanitary.

Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.

L. ANDERSON CO., Mfrs.,
MARTINEZ, CAL.

THE MARKETS.

San Francisco, Aug. 19, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The outlook for export grain business has improved greatly within the last week, and local prices for all grades show considerable advance. Arrivals here are fairly large, but consist mostly of deliveries on purchases for the mills and current trading is quiet.

California Club, ctl....	$1.62½@1.65
Forty-fold	1.60 @1.65
Northern Club	1.62½@1.65
Northern Bluestem	1.65 @1.75
Northern Red	1.57½@1.65

BARLEY.

The trade is still somewhat unsettled, and there is not enough business in shipping grain to quote, though the outlook is improving. Feed is a little easier locally, with no large buying movement.

Brewing and Shipping.	Nominal
Choice Feed, per ctl...	$0.95 @1.00
Common Feed	Nominal

OATS.

White oats are coming in very slowly, and have been marked up sharply. Otherwise there is no change, the demand being only moderate.

Red Feed	$1.10 @1.15
Seed	1.17½@1.25
Gray	Nominal
White	1.35 @1.40
Black Seed	Nominal

CORN.

A large lot of South American corn has arrived, but is said to be in bad condition, and no figures have been made on it. Local and Eastern grades are scarce, with prices about as before.

California Yellow	Nominal
Eastern Yellow	$1.90 @1.95
Eastern White	Nominal
Egyptian	Nominal
Milo Maize	Nominal

RYE.

Quotations are unchanged, the new offerings finding a moderate demand within the usual narrow limits.

Rye, per ctl.....	$1.40 @1.50

BEANS.

The bean market is in very uncertain shape at present, as shipments in several varieties out of the new crop are expected before long, and the general anticipation of a large crop, together with the European situation, are causing more or less fluctuation and variation of figures in different quarters. The local market shows a downward tendency, as dealers regard the coming crop as the governing factor, and spot offerings are too small to have much effect. On the other hand, a very heavy demand is reported in the East, where growers' representatives have lately refused to make quotations on any California beans, and look for much better prices than can now be obtained.

(On wharf.)

Bayos: Cal., per ctl....	$5.00 @5.50
Mexican	3.00 @3.50
Blackeyes	3.50 @4.50
Cranberry Beans	4.25 @4.50
Horse Beans	1.50 @1.90
Small Whites	4.50 @4.75
Large Whites	3.50 @3.65
Limas	5.50 @5.75
Pea	4.25 @4.50
Pink	4.30 @4.50
Red Kidneys	Nominal
Mexican Red	6.50 @6.75

SEEDS.

Some lines are rather unsettled on account of the war, and some outside offerings of canary are held at about 12c, this variety being nominal here. Yellow mustard also is nominal, dealers refusing to pay the prices asked. Little alfalfa is moving as yet.

Alfalfa	Nominal
Brown Mustard, per lb....	3¾c
Canary	Nominal
Hemp	2¾@ 3¼c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

With grain again tending upward, flour is very firmly held, and advances are expected in the trade.

Cal. Family Extras....	$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

The hay market shows little new feature. Arrivals are running about the same, consisting mainly of medium and poor grades. Choice offerings can be moved without much trouble, but at poor prices, as the excessive supply of poor stuff has a depressing influence. Growers continue to send in a great deal of hay on consignment in order to clean up the fields before the rains start, and this movement is likely to last for some time. The demand continues light, all interests being anxious to let someone else carry the stock. Offerings of alfalfa here are increasing.

No. 1 Wheat, or Wheat and Oats	$ 8.50@ 9.50
do No. 2	6.00@ 8.00
Barley	6.00@ 8.00
Tame Oats	7.00@11.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.50
Stock Hay	4.50@ 5.00
Straw, per bale.....	40@ 45c

FEEDSTUFFS.

Prices are pretty well maintained on alfalfa-molasses meal, but ordinary alfalfa meal is plentiful and cheap. Bran is very firm, with limited offerings, and middlings are higher. Cracked corn and rolled barley also show a slight advance.

Alfalfa-Molasses Meal, per ton	$18.00@19.00
Alfalfa Meal, per ton....	13.50@14.00
Bran, per ton.....	25.50@26.50
Oilcake Meal	33.00@35.00
Cocoanut Cake or Meal..	26.00@27.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	22.00@22.50
Rolled Oats	28.00@29.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

While a good many small price changes are noted, the market is running along about the same as last week. Green peppers have again been marked down a little, with offerings rather in excess of demand, and tomatoes also are decidedly easy. Some celery is appearing from Santa Clara county and finds a ready market at fair prices. String and wax beans are unchanged, and limas are again coming in. Peas show a narrower range, with better values for ordinary lots. Cucumbers and summer squash are a little lower, while current arrivals of corn are readily absorbed at a slight advance.

Green Peppers, lugs.....	25@ 35c
Carrots, per sack.....	35@ 50c
Green Peas, lb.....	3@ 3½c
Tomatoes: Delta, lugs...	30@ 50c
Beans: Wax, per lb.....	1@ 2c
String	1@ 2c
Lima	3@ 4c
Cucumbers, lugs	15@ 25c
Eggplant, lugs	35@ 50c
Green Corn, sack.....	75c@ 1.25
Summer Squash, box....	20@ 30c
Cream Squash, box.....	40@ 50c
Okra, box	35@ 50c
Celery, doz.	35@ 40c

POTATOES AND ONIONS.

The principal feature is a sharp advance in garlic, due to the cutting off of the supply of Italian stock. Some is arriving from Oregon and is held on the level with the best local offerings. Good Delta potatoes are higher, as most of the current arrivals are of rather poor quality, while onions are in large supply and lower.

Potatoes:	
River Burbanks	85c@$1.10
New Potatoes, lb.....	1@ 1¼c
Sweet Potatoes, lb.....	1½@ 2c
Onions: New Yellow, sack	70@ 90c
Garlic, Cal., per lb.....	10@ 15c
do Oregon	15c

Dairy Produce.

POULTRY.

Quite a lot of Eastern stock is coming in this week, consisting largely of roosters, and the market is considerably easier than it has been, though prices are not quotably lower.

Large Broilers	19 @20 c
Small Broilers, per lb...	19 @20 c
Fryers, per lb.....	19 @20 c
Hens, extra, per lb.....	16 @17 c
Hens, large, per lb.....	16 c
Small Hens, per lb.....	15 @16 c
Young Roosters, per lb..	20 @21 c
Squabs, per doz.	1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00

BUTTER.

Prices continue to move steadily upward. Arrivals are running fairly large, but the northern markets are taking up a considerable quantity, and British Columbia, in the absence of New Zealand stock, is looking to this market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	27½	27½	28	28	28	29½
Prime . Firsts ..	25	25	25	26	26	27
Firsts	23	23	24	24	24	24

EGGS.

After a slight drop at the close of last week, the upper grades are again advancing. Production, especially of extras, is steadily falling off, and the interrupted shipments of Chinese eggs is having some effect. Pullets are in fairly large supply and slightly lower.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	33½	33½	33½	34	35	35
Firsts	28	28	28	28	30	30
Selected Pullets...	28	28	27½	27	27½	27½

CHEESE.

Grades quoted on the Exchange show little feature, standing the same as last week after some slight fluctuations. Monterey cheese is higher, although supplies are still fairly large.

Fancy California Flats, per lb...	14 c
New Young Americas, fancy....	15 c
Monterey Cheese	15@15½c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras..	24½	24½	25	25	25	26
Eggs	34	34	34	34	35	34
Cal. Cheese:						
Flats ...	13¼	13¼	13¼	13¼	13¼	13¼

Deciduous Fruit.

The principal feature in the fruit market at present is the general easiness in apples, due partly to large offerings and partly to the fact that the export trade, which is usually an important factor, is now interrupted. The first belleflowers came in this week, but receive only moderate attention, and Gravensteins are lower. Huckleberries have lost the firmness of last week, other berries holding steady. Quinces are considerably lower, with liberal supplies and only moderate demand, while pears are steady as last quoted. Black figs are still easy, and the white variety is a little lower. Other tree fruits are quoted about as before, with ample offerings and a good steady demand. The melon market, also, has developed no changes, prices being comparatively low, with large arrivals of all descriptions. Shipments of most varieties of grapes are coming in regularly, and several lines are a little lower.

Huckleberries, lb.	8@ 11c
Blackberries, chest	$ 1.50@ 2.50
Strawberries, chest	1.50@ 3.00
Apples, New Crop:	
Belleflowers	75@ 90c
Alexanders	50@ 75c
Gravenstein	50@ 75c
Crabapples	30@ 85c
Quinces, box	50@ 85c
Nectarines, crate	50c@ 1.00
Pears, box, large.....	60c@ 1.25
do No. 2	40@ 75c
Peaches, crate	25@ 35c
do lugs	40@ 60c
Plums, crate	40@ 80c
do lugs	75c@ 1.25
Prunes, lugs	75c@ 1.25
Figs: Black, double layer.	40@ 65c
White, single layer.....	40@ 65c
Cantaloupes, crate	30@ 65c
Watermelons, doz.....	75c@ 1.50
Casabas, lugs	50@ 75c
Grapes: Malagas, crate..	45@ 60c
Tokays, crate	75c@ 1.00
Seedless, crate	50@ 75c
Muscat, crate	40@ 60c
Black	25@ 60c
do lugs	1.00@ 1.25

Dried Fruits.

The dried fruit market is still rather unsettled on account of the interruption of export trade, and prices seem to be tending downward, though there does not appear to be much trading at the reduced figures. It is understood that packers, being unable to realize the expected returns from export shipments, are unable to continue their buying operations with the usual activity, and are endeavoring to move their holdings at lower prices in the Eastern markets; though some who are said to be largely supplied are very slow to make concessions. It does not appear that any very general decline has yet taken place in the country, though prunes are quoted lower this week. The outlook would seem fairly favorable for good prices all round, and those who do not have to have the money are disposed to hold. Figs are decidedly strong, as the East depends largely on Oriental stock which cannot now be brought in. Apricots are said to be unsettled and easy, with a larger output than was expected, and peaches dull and weak. The New York Journal of Commerce says:

"Advices received in the trade here from California packing quarters reflect a better feeling among sellers of 1914 crop prunes for October and later shipment, which is attributed to the fact that deliveries by the growers to packers are falling below estimates. One important packer has wired his New York brokers that business might be done for October shipment on the basis of 5c f.o.b. for equal quantities of 40s to 60s. Another telegram offered 40s at 5c and 50s to 60s at 4¾c f.o.b. Coast for October shipment, which was accepted as an indication that holders are not altogether strong in their views. On the spot here the movement in prunes is slow, but, as stocks are not large and well concentrated, a steady feeling prevails.

"In apricots and peaches for shipment from the Coast out of the 1914 crop, the movement is slow, and the general trend of prices is in buyers' favor, though no decline in prices is noted.

"California loose Muscatel raisins, which were advanced ½c per pound owing to the probable shutting out of currants by the European war, have been withdrawn completely."

Evap. Apples, 1914	5 @ 6 c
Apricots, 1914	8½@ 9 c
Figs: White, 1914.....	3c
Black	2 @ 2½c
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	5 @ 6 c
Peaches, new	3 @ 3½c
Pears	8 @ 9 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@ 4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

The European war, by its temporary interruption of ocean traffic, has caused an almost unprecedented increase in the demand for California lemons in the Eastern markets, boosting local prices to from $7.50 to $8 in the Los Angeles market and $6.50 to $9 per box in San Francisco. Other citrus fruits are stiffening in the Eastern marts in sympathy, and substantial advances are looked for in oranges and limes, which may be used extensively as substitutes for drink products. On the 17th inst. 20 cars of Valencias were auctioned in New York, prices averaging $2.10 to $3.65. Nine cars auctioned at Boston averaged $2.15 to $3.15, while prices in other marts ruled slightly lower.

In San Francisco the only change in the situation is another sharp advance in lemons, due to the heavy Eastern demand which has resulted from the elimination of foreign stock from the market. The local price of limes has not advanced in sympathy. Oranges are moving locally in the usual quiet way for this time of year.

Oranges: Valencias, box.	$ 1.75@ 2.50
Med. Sweets, box.....	1.00@ 1.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box.	1.00@ 2.50
Lemons, box	$6.50@ 9.00
Limes, case	4.00@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

The nut market is decidedly firm, owing to the doubtful prospect of getting in foreign stock, though it is possible that larger supplies may be obtainable as shipping conditions are adjusted. Local buyers have raised the price offered for new almonds 1c all around. No price has been set on walnuts, but packers are said to be bidding 15 to 16c in the orchards with no business. The crop is expected to be of unusually fine quality and fair as to quantity. The New York Journal of Commerce says:

"Because of the strong reports current relative to foreign nuts, based on the expected shortage of supplies this season from primary European markets, the Pacific Coast market on almonds is excited, and at present it is impossible to buy at any fixed price. The latest recorded transactions were on the f.o.b. basis of 19½c for Nonpareils, 18½c for IXLs, 17½c for Ne Plus Ultra, and 14¾c for Drakes, an advance of at least 2½c over the opening prices made some time since on the 1914 crop. Spot markets of imported almonds held in stocks of imported almonds held in cleaned up as a result of recent activity of speculative and ordinary buyers who based operations on the expectations that there would be nothing to come forward in either old or new crops for a long time owing to the impossibility, or next to impossibility, of securing freight room. Prices on 1914 California walnuts are expected soon, but the outlook as to the basis to be made is uncertain. On the one hand is the shutting off of early shipments, at least from Europe, by the war, and on the other the indications of one of the largest as well as the finest crops, in point of quality, ever produced on the Coast."

Almonds, 1914 crop:	
Nonpareils	18¼c
IXL	17¼c
Ne Plus Ultra	16¼c
Drakes	14¼c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

The market is stiffening up a little, as dealers come to realize the shortage of fancy stock, and offerings of white and water white grades, both comb and extracted, are moving off fairly well. Off grades, however, are neglected, and prices are rather easy.

Comb: White	13 @16 c
Amber	10 @12 c
Dark	8c
Extracted: White	7 @ 9 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

Considerable wax is being shipped to outside markets, most offerings being readily taken up at the old prices.

Light	31 @32½c
Dark	27½@30 c

HOPS.

Picking is now under way in the principal districts, and several sales have been made, with indications of better prices. The outlook for production in Europe is very poor, and growers are accordingly taking a very firm view, while dealers show some hesitation in buying at the prices asked. About 15½c is the best that has been done so far.

1913 crop	12 @14 c
1914 crop	14 @15½c

Live Stock.

Prices for cattle have taken an upward turn, all lines being higher, as offerings for this market have been rather light of late. Hogs continue scarce, and show a further advance. Dressed lambs have been marked down.

Steers: No. 1	6¾@ 7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	6 @6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 5 c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8½@ 9 c
150 to 250 lbs	9¾@10 c
100 to 150 lbs	9¾@10 c
Prime Wethers	5½@ 5¾c
Ewes	5 @ 5¼c
Milk Lambs	6½@ 6¾c

DRESSED MEATS.

Steers	10 @11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	10½@11½c
Ewes	10 @10½c
Suckling Lambs	11½@12½c
Dressed Hogs	15 c

WOOL.

So far little business has been done in the fall clip, as the market is unsettled and buyers are rather "up in the air." There is considerable uncertainty as to what values are likely to prevail.

Fall clip:	
San Joaquin	7@ 9c

HIDES.

Prices in nearly all lines have been marked down a little from the recent extreme level, as the demand is hardly as strong as it has been. Offerings of country hides, however, are light, and the market shows no pronounced weakness.

Heavy Steers, over 56 lbs.	14½c
Medium	14½c
Light Steers, under 48 lb.	14½c
Heavy Cows, over 50 lb.	14½c
Light Cows, 30 to 50 lb.	14 c
Kip	15 c
Veal	17½c
Calf	17½c
Dry—	
Dry Hides	24½@25½c
Dry Kip, 10 to 15	24½c
Dry Veal, 5 to 10	29 c
Dry Calf, 7 down	29 c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

Shippers are still holding off from this market, no large lots having appeared here for some time. Conditions, in fact, do not appear to justify increased offerings, as buyers are taking very little interest.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

SPECIAL DECIDUOUS MARKET REPORT

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

There has been a noticeable demand for peaches in the Middle West markets during the past week, due to the fact that the supply from the State is very light and it is rather between seasons, as other districts, with the exception of northern Georgia, are not shipping in any great supply.

There has been a sharp decline in the Bartlett pear market due to the fact that a large percentage of the arrivals from California have been overripe. Good, clean, firm stock, however, averaged from $2.50 to $3.

There is practically nothing left to be shipped from the State in the line of tree fruits except Salways and Clings. About 50% of the Salway crop has already been contracted for at fairly good prices, ranging from 60 to 70c delivered. On account of the dryness of this particular variety of peach, cars can be shipped from some districts under ventilation, thereby saving the cost of refrigeration.

There is a heavy movement of Malagas, and in our judgment too heavy. It is not possible to secure very satisfactory prices for any variety of deciduous fruit that moves at the rate of one hundred cars a day. It is impossible for shippers to regulate conditions in order to bring about beneficial results at the receiving end unless the shipments themselves are curtailed. There is great anxiety on the part of the Malaga growers to ship as much as possible of their crop before the Tokay season opens. In doing so, they unfortunately break the market for themselves and affect conditions for the balance of the season. We anticipated the crop was approximately 3,000 cars of Malagas, at least one-third of which will be shipped before the Tokays are in the market.

The first straight car of Tokays will probably be shipped about the 19th or 20th. Great care will be necessary in packing Tokays this season, due to the excessive amount of mildew and sunburn in nearly all districts.

Growers and shippers alike have been optimistic for the last week regarding the sales of late grapes, presuming that the market will take a sharp advance on account of the war situation not permitting Almerias to be transported from Spain to America, but recent advices indicate that there is a possibility of our Government making some arrangements whereby commerce may be established on the seas under ships flying the American flag, and a letter from Spain advises us that owing to the unusual cold weather during the latter part of May when the flower of vines passed into fruit, the quantity of barrels is estimated at 1,800,000 to 2,000,000. Last season's shipments aggregated about 2,200,000 barrels. The unusual dry weather and the great scarcity of water in many districts caused the grapes to be very small. In some districts, however, where water was plentiful, the grapes were of usual size and quality. Shipments will be somewhat later than last season and one vessel is booked to sail for the United States September 5th. Whether this will be permitted or not depends upon what arrangements this Government can make with countries now at war.

Last season the New York Board of Health seized a large portion of these Spanish Malagas as being unfit for sale, and there is a tendency on the part of Spanish shippers to avoid New York as much as possible. We understand that recent very hot weather, cool high winds, followed again by heat, has caused some decay in the vineyards and this further strengthens the fact that the shipments will be considerably reduced to this country through fear of their being seized by the federal authorities.

The markets for the past week ranged as follows:

New York—Wickson, $1.14; Bartletts, $2 to $2.65; B. Hardy, $1.36 to $1.90; G. Duke, $1.11 to $1.95; Giants, 80c to $1.40; Elbertas, 50c to 78c; Kelsey, 60c to $1.10; Gross, 97c to $1.45; Crawford, 50c to 66c; Tuscans, 50c to 70c; Diamonds, $1 to $1.30; Thompson Seedless, $1.08 to $1.70; Malagas, $1.08 to $1.86.

Chicago—Bartletts, $1.35 to $2.40; B. Hardy, $1.70 to $1.85; G. Duke, $1.25 to $2; Giants, $1.08 to $1.45; Elbertas, 55c to 80c; Kelsey, 75c to $1.35; Gross, $1 to $1.45; Crawfords, 60c to 70c; Diamonds, $1.49; Thompson Seedless, $1.13 to $1.37; Malagas, 90c to $2.03.

Minneapolis — Bartletts, $1.70 to $2.55; G. Duke, $1.25 to $1.80; Giants, $1.20 to $1.60; Elbertas, 30c to $1.15; Kelsey, $1 to $1.40; Gross, $1.30 to $1.65; Crawfords, 20c to 70c; Diamonds, 1.70; Thompson Seedless, $1.05 to $1.25; Malagas, $1.05 to $1.65.

Boston—Wicksons, 50c to $1.80; Bartletts, $1.20 to $2.75; G. Dukes, 80c to $2; Giants, $65c to $1.55; Elbertas, 40c to 85c; Kelseys, 50c to $1.50; Sugar, $1.15; Gross, 65c to $1.30; Crawford, 45c to 75c; Diamonds, $1.15 to $1.90; Thompson Seedless, $1.05 to $1.60; Malagas, 70c to $1.30; Bradshaw, 85c to $1.20.

Philadelphia — Bartletts, $1.10 to $2.70; G. Duke, 90c to $1.60; Giants, 40c to $1.40; Elbertas, 40c to 75c; Kelsey, 55c to $1.55; Gross, 80c to $1.60; Crawford, 35c to 65c; Diamonds, $1.15 to $1.35; Thompson Seedless, $1.30 to $1.65; Malagas, $1.10 to $1.20.

It is reported that the states of Michigan and New York will ship about 12,500 cars of grapes this season as against considerably less than half of that amount last year. For some unaccountable reason, several of the grape juice factories have shut down for an indefinite period, and others who had contracts with growers for grapes at $35 a ton have abrogated these contracts and reduced them to $12.

The total shipments of deciduous fruits to August 18th was 7303 cars, as against 6627½ cars to the same date last year.

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PUBLISHER'S DEPARTMENT.

The "swellest" nursery catalogue that we have seen for many a day has just been received from the Fresno Nursery Co. We don't know who printed it, but suspect the Kruckeberg Press of Los Angeles of being guilty. In the foreword of the book the Fresno Nursery Co. states that the business done last season exceeded $100,000, which means that the company has been successful during the twenty-five years of its existence in giving what the customer wanted. The catalogue just issued will prove of great value in giving definite information as to the planting and growing of trees and plants.

The PACIFIC RURAL PRESS home office will be moved on September 1st from 420 Market street, where it has been for the past three years, to the Underwood building, 525 Market street, third floor. This move is made necessary by the great growth of our business in all departments. When we moved to our present location the office space seemed to be ample, but during the last three years the subscription list, advertising, as well as book business have more than doubled. We have more than twice the space at our command in the new location, which will give us space for further expansion, and we invite our patrons to come and see us there when they are in this city.

Have you written us for our special book offer that we are making in connection with our new book, "One Thousand Questions in California Agriculture Answered?" We are sure that every subscriber will be benefited by having a copy of this book in his home, and to get it there we are making this special offer, which we will send to you upon receipt of a postal card request.

New subscribers enrolled during the past week totaled 236. The growth of this department of the RURAL PRESS has been very satisfactory so far this year, and in order to make good to our new as well as old readers, we are making special efforts editorially to give each week more and better articles. Suggestions as to how the paper may be of more value to its readers will be gladly received from subscribers.

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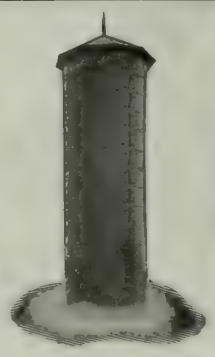

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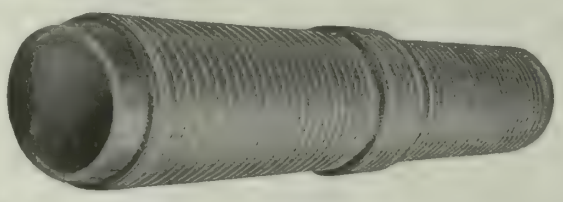

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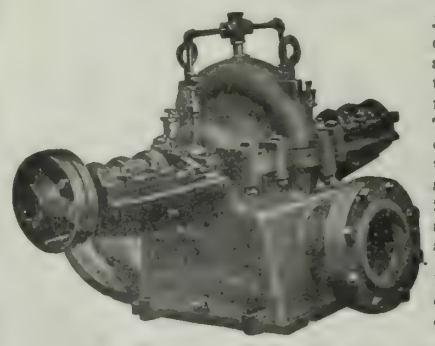

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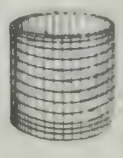
REDWOOD TANKS—DRYING TRAYS



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THE PACIFIC RURAL PRESS

Vol. LXXXVIII. No. 9. SAN FRANCISCO, SATURDAY, AUGUST 29, 1914. Forty-F . Year

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Prevention of Wood Decay in Fruit Trees.

[By Prof. W. T. HORNE, of the University of California, at the California Fruit Growers Convention.]

In large forest trees the decay and disappearance of wood in the center give us the well known hollow trees. Such trees may live for many years, but are liable to be broken down or blown over. In our orchards also wood decay is common. Decayed orchard trees may live for some years and bear reasonable crops, but usually a heavy load of fruit breaks off one limb after another, and the tree becomes a worthless stub. Peaches are especially subject to rapid loss in this way, but present discussion applies to all our fruit trees. The decays considered in this paper are those which start from some surface of dead bark or wood and spread through the center of trunk and limbs without affecting, at least for some time, the bark and cambium.

This kind of decay should not be confused with the oak fungus disease, which affects primarily the roots, but may spread up some little distance into the trunk. It affects perfectly sound and healthy roots and kills the bark, causing it to decay in a characteristic manner, and then spreads into the wood, causing a soft, light-colored decay. In contrast with the oak fungus disease, the common wood decays do not attack perfectly sound, healthy trees with unbroken bark, but the rot starts from some exposed wood and then works up and down through the center of the tree.

Wreck of a Fruit Tree Through Neglect of Decay Prevention.

Importance of Wood Decays.—Fruit trees with decayed centers may bear heavily, but usually such trees rapidly become cripples. Not only is the carrying strength reduced, but there is good evidence that many of the dead limbs seen in orchards are due to wood decay which has worked outward to the bark. Mr. C. J. Rodgers, of Watsonville, working in our laboratory, has shown that the so-called sappy bark disease of apples is due to one of these fungi. That such decays are common is generally conceded, but no definite data have been available. Accordingly, Mr. W. W. Thomas made careful counts in representative orchards in three regions, coast valley, interior valley, and foothills. While the results secured may not be at all final, they clearly show several facts with respect to stone fruits. First: Contrary to anticipation, wood decays are more prevalent in the hot interior valleys and foothills than in the cooler and more humid coast valleys. The winter moisture in the three regions is not very different, while the more frequent sunburn and wider cracking of large pruning wounds doubtless account for t racts found. Also in the orchards examined there had been less grafting over of bearing trees in the coast region. Second: It appears that more than half the stone fruit trees of bearing size in California are certainly affected with wood decay. Third: Not much more than 2% of stone fruit trees are free from sunburn or large wounds. Fourth: By far the largest part of infection comes from sunburn, large pruning wounds, or grafting over stubs. Fifth: Fully two-thirds of the decay is caused by the common oyster-shell fungus, Polystictis versicolor. A dozen other fungi will probably include nearly all of the common wood decay forms in orchards.

We believe wood decay is a trouble of stupendous importance to the California fruit industry. Professor Wickson says: "There are instances in the earliest settled parts of the State, where peach trees above fifty years old are still vigorous and productive. * * * Some trees have in fact gone along in thrift * * * because they have never been allowed to sunburn, * * * have never been pruned with an axe, and have never lost a limb nor had a wound into which decay could penetrate and descend to the root."

Cause of Wood Decay.—Wood decay does not set in because a tree is old or ordinarily because it is weakened by lack of food or water. Neither is it a natural process necessarily following exposure to air and moisture. Serious wood decay is due to infection by any one of several fungi which gain entrance at some point where the wood is exposed or where the bark is dead. The fungus grows in the wood, digests it, and uses it up, finally leaving only a little ash. This process of digestion constitutes decay. Infection must take place from spores which fall on dead bark or into cracks of wounds. These spores are formed on definite bodies of which the brackets or oyster-shell-like structures are examples. The spore-bearing brackets grow almost entirely during winter, so spores will not be scattered during the dry summer. The spores must lodge in a moist crevice in order to grow and establish the fungus in the wood.

Treatments.—Prevention of ordinary wood decay depends wholly on protecting exposed wood from infection by spores of these fungi. Abundant moisture is doubtless also necessary.

Measures will vary according to the kind of trees to be dealt with.

First, for small trees just planted the greatest importance attaches to shaping the tree so that later there will be no need to remove large limbs—in other words, get a simple framework. The tree

(*Continued on Page 197.*)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

ONE DOLLAR PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS CO., SAN FRANCISCO

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Aug. 25, 1914.

Stations.	Rainfall Data.			Temperature Data. Past Week.	
	Past Week.	Seasonal to Date	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.15	60	50
Red Bluff	.00	T	.00	98	56
Sacramento.	.00	.00	.00	90	52
S. Francisco	.00	.02	.01	66	50
San Jose	.00	00	.03	82	48
Fresno	.00	T	.00	98	58
Independ'ce	.00	.16*	.00	90	52
SanL.Obispo	.00	T	.03	76	50
Los Angeles	.00	.01	.00	78	56
San Diego	.00	.00	.00	72	60

T means trace
*Of this amount .10, not previously reported, fell on July 19-20.

The Week.

To ascertain what is the proper attitude of the United States toward our warring brothers in Europe, and, for us, particularly the attitude of California thereto, continues our most important effort. Of the daily or weekly course of the war, we undertake nothing. We would not add a jot or tittle to the burdens of those who can now buy dailies for one cent each and therefore get five times more lies for a nickel than formerly. There seems no limit to their "journalistic enterprise." One of them, last week, killed that grand old man the Pope of Rome, about twelve hours before his Maker called him home, for one cent—which was an unnecessary sacrifice of value, for no one could reasonably expect to get such a great big lie for that money. But we have naught to do with this: the great burden upon our conscience is to discern our proper duty toward a war-racked continent, and toward ourselves, in such a wreck of affairs. We thought our end was attained on Monday last when the cable brought a "Sonnet to the United States" by William Watson, believed by us to be poet-laureate of England, for we read with deep emotion these lines:

"Great, O majestic nation, great is calm;
Great when old bounds dissolve, to tower apart,
There beyond Europe's throes and with a heart
At peace from northern pine to southern palm.
Great in glad harvest time to send the psalm
Rolling to heaven, nor be as they who start
At mutter of far cannon and when the mart
Rocks to and fro delirious, great is calm.

But—

"Tut, tut," says President Wilson, "be careful lest you endanger our neutrality," and the linotype refuses to go farther, for we are called upon to "blast, with our lips of fire, a despot swollen with desire"—which truly we have been doing, upon each July 4th since 1776, but Mr. Watson seems to have a certain particularity in his suggestion which surely lacks the spirit of neutrality which we invoke. "Great, O majestic nation, great is calm"—and we have to let it go at that.

Why We Must Be Calm.

The California State Development Board recalls some figures from the last census of the United States and very properly urges attention to them. They show that not less than 21 per cent of California's population is foreign born, and nearly 28 per cent more is of foreign or mixed parentage. The nations now at war in Europe are represented in California by large numbers, as follows:

Germans	76,208
Austrians	17,330
Hungarians	3,126
British	161,671
Italians	63,549
French	20,470
Russians	16,850
Belgians	1,441

Italy is not now at war and we hope will not be, and California-Italians have a double duty to remember—toward their old home and their new. It is a very interesting and significant fact that much more than one-half of the one-quarter of our California population cited above is more or less rural in its habitation and industry. Of the German population, 51 per cent is outside the three largest cities; of the Italians, 61 per cent; of the British, 56 per cent; of the French, 46 per cent; of the Austrians, 50 per cent; and of the Russians, 38 per cent. This preponderance of rural foreigners is placed in food-producing and handling areas and therefore should feel a double duty toward the great calmness of our nation's attitude; for thereby they can help us discharge our world-duty and at the same time do most to alleviate the distress which must inevitably weigh heavily upon their relatives and old compatriots, as the by-product of this most unholy war.

Why There Is War.

As we have already endangered our neutrality by admitting that there has always been, since 1776, "a despot swollen by desire," we must of course state clearly that the gentleman, who is at this moment alleged by the poet-laureate to be swollen in the head, is vigorously denying that it was his cheek upon which the bee of unholy ambition alighted but that it was upon some cousin of his in the despot family, and that he was actively employed in applying soothing poultices to the stings on his cousin's cheeks when the skies fell. Really, perhaps, it does not matter much, one way or the other—all of them had cheeks protruding to the bee-line and the angry insect, confused by the several reeks of pudding, beer, and caviar, stung not wisely but too well. It becomes almost impossible then to satisfactorily explain why there is war, for to have war break out in such a bunch of peace-makers as those European monarchs claim to be, seems irrational. Perhaps, then, there is no reason for the war, and the London Chronicle may be right when it says there is no cause for it "which is worth the bones of a single soldier," and that is surely a picturesque way to value a cause which will kill hundreds of thousands before it demonstrates its causelessness. Historians tell us that many other great wars have also no credit but only debit entries on the world's ledger, and therefore it is the duty of the world to make them impossible, and the proper attitude of this great, calm nation is to demonstrate its ability to stop them. From this point of view, the six lines required to fill the laureate's sonnet may be read impersonally, without danger to our neutrality:

"But when a despot, swollen with desire
Of boundless sway, forbears not to uncage
War's wolves on shieldless youth and guardless age,
Greater, O nation, greater then is ire.
Doff then thy placid mien, unleash thy rage
And sear and blast him with thy lips of fire."

We are aware that this leaves the great question of who struck Mr. William Patterson unanswered, but if this experience does not bring Europe into such governmental condition that no single man alive shall ever again have the power to strike the peaceful Patterson, it would really seem as if Europe had no power to assimilate empirical instruction.

The Ways Are Open.

But the high seas beyond the Golden Gate are open, as foreshadowed in our comments of last week, in spite of the belligerents who are cruising about outside, and food is going to Europe because the London underwriters insure all vessels except those flying the flag of Germany and Austria. At least two cargoes of California barley are on their way to Europe, others are preparing to clear, and before long the greater part of the 800,000 tons of California barley, which has been tied up for three weeks, will be on its way to European consignees. The rates on such cargoes under the American flag are 2 to 2½ per cent, in some cases about one-half that granted to cargoes under the flags of the allies other than British. American foods are going even to the interior of Europe as in the case of more than a million bushels of wheat going from Atlantic ports to Switzerland through France and Italy. This week the United States is setting apart five million dollars to insure American vessels and cargoes against the risks of war, and Uncle Sam is counting his money to see if he can get in as chief owner of a corporation for the purchase of ships to move American crops to Europe. The plan is for the creation of a corporation capitalized at $10,000,000 or more, as may be necessary, the Government to hold 51 per cent of the stock and the remainder to be open to public subscription. The Government's capital would be raised by use of Treasury funds, and if necessary by an issue of Panama Canal bonds up to $30,000,000, as the Panama Canal owes the Treasury $150,000,000. If the public failed to subscribe the 49 per cent, the Government would go ahead with the project, anyway. Those who oppose the plan contend that there will be ample private capital to meet the situation.

Uncle Sam as a Promoter.

However this goes, and we do not know enough about it to care which way, it does seem to be desirable that this country should do something or help others to do something to make our flag respectable in trans-oceanic traffic. With all our ocean frontage, we have had not many more ocean fliers than Switzerland has warships, and some foreign owners have taken pity on us and given their ships American names. It would seem that we have been too busy building prairie schooners to lay in heavier craft—unless they were laden with cannon. We have let foreign nations float our tourists across the water, pluck them while they were quenching their thirst for antiquities, and return them in their pin-feathers in foreign ships. We have given foreign owners all the profits they desired in carrying our exports and imports for us. In this line of world-business we have surely been too majestically calm. And now we have a chance to run to the other extreme. For example, we are too short-sighted to see any practicability in the suggestion which is credited to Rudolph Spreckels, by these words:

"Thousands of tons of fruit art rotting on the ground in California, owing to the inability of small packers to finance their operations. Thousands of tons of grain, already in sacks, remain in our fields, owing to the tie-up of shipping and the financial cost of storing and holding the same. Our Federal government should take steps at once to conserve these food necessities—by purchase, if necessary. It would also give the Government control over future prices and help defeat the plans of those who glory in what they believe to be their opportunity to gain great fortunes out of human necessity resulting from war. This should be done in every State in the Union. Congress should authorize the President to appoint commissions in each State to make investigations into the food crisis, and to embody their findings in recommendations for the conservation of every ounce of foodstuff in America for future use."

This seems to indicate that, unlike the European monarchs under discussion above, Mr. Spreckles is swollen in the heart rather than the head. How a congressional commission could get fairly underway before all the stuff, which he mentions as exposed, would perish, we cannot understand. If, however, it could start tomorrow, how could it get possession of all this stuff, except by condemnation, which our constitution and laws do not contemplate. If Uncle Sam started in to buy, what would be the effect on prices? It seems to us that the whole conception is fundamentally wrong and un-American. We believe the government should arrange to help producers finance their own operations, give them some protection against contractors who break with them, and usurers who prey upon their necessities and protect both producers and consumers against food trade gamblers who plan to practice extortion. What American industry needs, it seems to us, is protection against imposition. It is better that the government should be the big-brother than the father of Americans: the big stick is mightier than the nursing-bottle.

The Fate of the 8-Hour Nonsense.

As shown by their forcible letters on another page, the better half of our California citizenship has taken up the 8-hour discussion, and there is little for us to do but to return to the pleasantry of our grandfathers and cry out: "Go in Sal: I'll hold your bonnet." Afterward, too, we can claim the victory; after the manner of that old story of our childhood which tells about the valor of the husband who shot out of the back door when the bear entered by the front porch, leaving bruin to Betsy and her broomstick and boasted afterward how "Me and Betsy druv out the bar." Come to think of it, why did we men give the women the great boon of suffrage, except for our greater protection and comfort? And now, surely, we can pat ourselves on the back for our great foresight and sagacity. And surely, too, there is no political issue likely to arise in a generation which so richly deserves the broomstick and the dishcloth as this proposed concession to worthlessness and idleness.

But there is a serious side to this, of course. Mr. Coates laid bare the fundamentals of it in our issue of August 15. Good work has always been the glory of the human race, and plenty of it has been the essential of success in every line of worthy endeavor. It has been the good work which a man has gotten into, not gotten out of, which gives him chief claim to the image of his Creator. "And the evening and the morning were the sixth day * * * and he rested on the seventh day." He did not quit at midday: it was morning, midday and evening—and from creation's dawn to the end of time, men, who accomplish anything, have worked and will work, morning, midday and evening. Work opens the way for a young man to worthiness in the world; work smooths the pathway of an old man out of the world. Happy alone is he who has plenty of work!

Queries and Replies.

Querists must submit full names and addresses.

Bluegrass and Lippia.

To the Editor: I am writing you in regard to a lawn plant called lippia. I have a large bluegrass lawn in which are two or three places where the grass does not grow well. I have tried both bluegrass and clover. I should like to know if I plant lippia is there any danger of its getting in the lawn and killing out the blue grass?—S. H. F., Dixon.

We have never had opportunity to observe a fight between lippia and bluegrass where the latter had favorable conditions of moisture. In the absence of that, the lippia will undoubtedly prevail and displace the bluegrass. Lippia will not match well with bluegrass, for the color is different, and lippia will lose its leaves during frost and cause the lawn to be black-spotted during the winter season. If the places where the grass does not grow well are alkaline or otherwise unfavorable for the growth of plants, nothing but an experiment will tell how well the lippia will accept the situation. Lippia will stand some alkali, but not an overdose of it.

Black-eye Bean Straw.

To the Editor: I have about 14 acres of Black-eye beans now ready to harvest. Has the bean straw any commercial value after being threshed by machine?—Subscriber, Delano.

Bean straw is good cow feed, especially if fed with something succulent like beets or pie-melons. We are not aware how far its value is recognized in the general markets. Perhaps you will have to find a feeder who can use it with his own stock. Bean straw has been sold at $2.50 to $5 per ton in that way. Its value would be low now because of the cheapness of alfalfa hay.

Citron Melon or Pie Melon.

To the Editor: What name does the "citron melon" go by and are there different kinds? How does it grow: like other melons? Where can I purchase the seed? When to gather to prepare for getting ready for the market? How to prepare for the market? What price does it bring when ready for the market?—J. B., Ukiah.

The "citron melon" belongs to the same botanical genus as the watermelon, and resembles it in growth. It differs from the common watermelon from the fact that the latter has been vastly improved by selection for sweetness and large amount of tender pulp, while the citron melon in a raw state is practically inedible to man. The citron melon is therefore not a commercial fruit, but is used for stock feeding and has rather low nutritive value and no market can be found for it except in stock-feeding communities. It should be fed in connection with alfalfa, bean straw, or some other substance which is richer in protein. Seed can be obtained from any seed dealer. There is considerable variation in size, form and coloring, as there also is with watermelons. The preserved pie-melon is not the "citron" of commerce, which is really a citrus fruit.

Do They Need Irrigation?

To the Editor: Will it pay to irrigate a prune orchard (where the water stands 10 ft. below the surface) for the fruit buds for the next crop, and how soon?—C. H., Lakeport.

It is impossible to answer your question without some knowledge of the conditions. Take a look at the trees and see if the leaves at the growing tips are well nourished and the general aspect of the foliage indicative of vigor or otherwise. Then dig down to a depth of three or four feet and see if the soil in which the roots are growing is moist enough to ball in the hand with pressure. If the soil is manifestly too dry at that depth, irrigate as soon as the fruit is gathered. It is now too late to irrigate to advantage this year's fruit. Another condition indicating desirability or otherwise of irrigating your trees would be the coming of the fall rains. If you are pretty sure of good rains in September and October and the trees are now looking well, the probability is that they do not need irrigation.

Autumn Legumes.

To the Editor: Is it too late to sow beans on irrigated land, and what kind does best on black adobe soil? How should they be sown and how far apart in the row? Also, can cowpeas and vetch be sown for a fall forage crop?—T. T., Willow, Cal.

Except the horse bean (or Portuguese bean, as it is frequently called), which is quite hardy, it is probably too late to sow beans or cowpeas (which are also beans) unless you can be sure of about one hundred days free from frost. Vetches can be planted at any time during the autumn that the soil contains sufficient moisture either by rainfall or by irrigation, for vetches endure California valley frosts and make good winter growth. Starting in the fall, vetches should be planted in drills far enough apart to cultivate in case rains should be long delayed.

Standing and Outlook of Fig Culture in California.

[By George C. Roeding at the recent State Fruit Growers Convention.]

(Concluded from last week.)

Bear in mind that the fig tree is of a spreading habit and is also a great surface feeder and therefore avoid planting the trees too close together. On sandy soil trees may be planted 25 feet apart, but on a good loamy soil 30 feet is a good distance, while in exceptionally rich land 35 feet would be preferable. On the general run of soils 30 feet is a safe distance to plant. As a border tree for enclosing orchards or vineyards, or for aligning avenues, the trees are not only very striking in appearance and exceedingly ornamental, but also very profitable.

Although the fig will stand all kinds of neglect after it is established, too great emphasis cannot be laid on the close attention which must be given in transplanting the trees from the nursery to the orchard. The roots of a fig tree are very susceptible to exposure, hence should be carefully covered in transferring them from the trenches to the field. Before planting, cut off all the bruised and lacerated roots, and make a fresh cut on all the other roots.

It is surprising what effect the puddling of the roots have in preventing their drying out even in cases of severe winds, and we cannot emphasize the importance of this too strongly. As an illustration of this point, we wish to say we have taken trees which were in leaf and after puddling the roots thrown them into the open air for a couple of hours and not a leaf would wilt, while trees not treated in this manner would dry up, root and top, in ten minutes exposure. To make a puddle, dig a hole 18 inches deep 2 feet in diameter, fill it partly full with heavy soil, mix with water until you have a muck the consistency of a heavy paint. Dip the roots into this, and give no further concern about their drying out even if exposed to the direct rays of the sun for a short period.

The trees when planted should not stand more than three inches deeper than they stood in the nursery row. Never neglect to settle the earth around the trees with no less than 15 gallons of water. After the water has soaked away, fill in with fine soil without tamping. No greater mistake can be made than to wait for rain or for water to be turned into the irrigating ditches. After the tree is planted, cut back 20 inches from the ground, and cover the wound with rubber paint or coal tar.

The first winter cut the branches of the one-year trees back to about 12 inches, leaving not more than four to make the head of a tree. Have these distributed in such a manner that there will be sufficient room for them to expand without crowding as the tree grows older. The second season cut not less than two-thirds of the new growth, leaving not more than two shoots on each of the frame work branches. Any branches on the under side of the limbs having a tendency to droop to the ground should be removed. The third season shorten in the new growth about half, leaving the same multiple of branches on each of the previous year's shoots as were left the year before. In after years the pruning is limited to the removal of branches which cross or interfere with each other and checking branches making an excessive growth. Young trees should always be protected with three protectors to prevent sunburn. The fig tree is just as responsive to good care, thorough cultivation as any other variety of fruit tree, and the bearing capabilities will be commensurate with the care bestowed on the trees while young. But very little fruit is to be expected till the trees are four years old.

As you will observe, my remarks have been made almost exclusively in reference to the Smyrna fig as grown in California. I do not wish to be placed in a position of minimizing in any way the value of the Adriatic type of figs. Until the introduction of the Calimyrna and its successful establishment as a commercial article, the White Adriatic of all White figs grown in California was the first, and is still being extensively shipped and probably will be for years to come, although I am of the opinion that as the industry develops, and it surely will, now that we have a fig equal to the world famous Smyrna fig, with the additional fact in its favor that the fig as grown in California is superior to the imported article, therefore, it is only a question of a short time when practically all of our dried figs will be of this type. White Adriatics may be grafted over into the Smyrna without incurring any severe loss to the grower except that he will be out of the crop for, say, three years. There is no fruit that is grown that has not its shortcomings, and the Calimyrna is no exception to the rule, but its bad points are so infinitesimally small as compared with the Adriatic that any objections that are made to it are not worthy of consideration. The very fact that the White Adriatic sours badly if there should happen to be any cool weather during the early part of the drying season, and also that it is necessary to sulfur the figs not only to obtain a better color to the skins, but also for the purpose of neutralizing the sour taste which is so pronounced in these figs, is enough to relegate it to the background.

As to the Mission or California Black, I want to say that it is deserving of more prominence that it has received among our dried fruits. Its skin is so thin when dried that one is led to believe that it has no skin, and as to the flavor, it certainly stands next in this respect to the Calimyrna. Trees are enormous growers, and very heavy croppers. The first crop is well adapted for shipping purposes, and the second crop not only ships but dries well. This fig can be dried at even and less expense than the Calimyrna. The only objection that may be cited against it is its color, and just why this happens to prevent its ready sale I am not prepared to say, except I do know that some seasons the fig sells well and there is every encouragement for more extensive planting, while at other times this fig is a drug on the market, and difficult to sell at any price.

That fig culture in California is still in its infancy must be conceded when it is borne in mind that our annual production is less than half of our imports. All of these figs are grown in the Meander valley, which is 85 miles long and only a few miles wide. In order to have some realization of what this industry means to Smyrna during the harvest season, you will be somewhat surprised when I tell you that 30,000 people are engaged in the handling of this one crop, and that the United States is today the greatest consumer of these figs, all this in spite of our rather high duty. Do you know that California is destined by reason of climate, soil and the establishment of the blastophaga to wrest this trade from Asia Minor and divert it to our own people? Is this not an irrefutable reason for the affirmation that Smyrna fig culture is not only feasible, but is sure to be highly profitable in this State.

Little Bill came bringing a scratched finger for peroxide and consolation. "I cut it on the cat," he explained.

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SACRAMENTO

One Thousand Questions in California Agriculture Answered

By EDWARD J. WICKSON, A. M.

Is made up of questions asked the PACIFIC RURAL PRESS by actual farmers and answered by Prof. Wickson. These queries and replies make a book of nearly 300 pages, bound in cloth, and is sent postpaid for $1.50 per copy. Every farmer should have this book, because problems confront him daily, which are answered in a concise way in this book. Every subject which interests the reader is easily found through the comprehensive index.

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R. F. WILSON, 447 W. Main St., Stockton, Cal.

Dates, a New Industry for the San Joaquin.

W. R. Nutting, of Fresno, is the principal mover in the attempt to place date growing on a commercial basis in the upper San Joaquin valley. Last month the first public step was taken when the San Joaquin valley Date Association (co-operative) was incorporated at Fresno. Mr. Nutting's idea is that there are one or two million acres of sub-irrigated alkali land in the counties of Fresno, Madera, Kings, Tulare, and Kern that are now practically valueless, on which a new industry can be started and maintained. The date palm will grow well and produce good fruit in that section if the right kinds are planted. The varieties for the San Joaquin valley should be different from those grown in the Mecca district, where the season is longer. The high-priced, confectionery varieties are not possible in the San Joaquin, but the stock-food kind, however, may be grown at a larger total profit when fed to hogs, sheep, or cattle. The low price of the land and the need of more stock food in the West, he contends, will make this industry an immediate success.

Starting a date plantation from seeds will cost about as much per acre the first year as a field of corn, and the care per year till they come into bearing, in about eight years, will be very small. "Sandy land, or the best of land with a little too much alkali to grow grapes or alfalfa, and all good land is good for dates."

The object of the new Association as outlined by Mr. Nutting, is not to buy and plant any large tract, but to promote, organize and supervise the industry in all ways. At a later date a Date Growing Corporation may be organized for the purpose of growing this fruit commercially. Anyone interested in the establishment of this great industry in the San Joaquin valley may learn more of the details by writing or calling on Mr. Nutting, at 1248 K street, Fresno.

Harvesting Dates Near Elche, Spain.

PREVENTION OF WOOD DECAY IN FRUIT TREES.

(*Continued From Page 193.*)

should also be shaped for strength, so that neither the load of fruit nor orchard operations will be likely to break off large limbs. Wounds should be treated as recommended below, but it appears that wounds which heal over in one year rarely become infected.

Second, trees of some size which have wounds and are liable to infection, but are still apparently sound. According to our studies, this will include a little less than half our bearing stone fruit trees. All horticultural procedure which I have seen recommended is inadequate for protecting these trees, and I take the liberty of suggesting a method on the basis of our present information.

A. When a cut or wound is made exposing the wood of a tree it should be wet with a germicide. This should be done immediately or as soon as the surface has dried and before cracks have formed.

B. Immediately after disinfection, as soon as dry enough, the wood should be covered with some sealing paint to prevent cracking as far as possible.

C. This process must be repeated for all wounds every year until they are healed over. The reason for this is that no sealing material can be trusted to last more than one season.

D. This operation should be done in late summer or fall in California. The reason for this is that cracks at this time will be at their widest and some spores may have gotten in. These must be killed and the places for entrance of others closed.

For the disinfectant (A) I recommend corrosive sublimate, 1 part to 1000 of water by weight. Corrosive sublimate is a poison and must be used carefully; it must not be put into a metal bucket nor come in contact with any metal or the solution will be spoiled. Wooden buckets or enameled ware without breaks may be used.

For the sealing paint (B) I recommend asphaltum softened with benzine to make a rather thick paint. This preparation is said to make a covering material which does not become brittle on drying but becomes plastic in hot weather.

Third.—Trees already infected with decay are not to be cured by the above method. They are subjects for tree surgery, which is entirely too large a topic for this paper. Tree surgery in the orchards will pay if wisely done, sometimes. I cannot refrain from calling attention to three points: (a) wood decays are greatly favored by excessive moisture, therefore make all cavities so that they will drain perfectly and remain as dry as possible; (b) where decayed wood is removed, use disinfectant freely on the wood surfaces and paint as recommended for wounds; (c) use cement only for support, never for sealing up a cavity. There will rarely be any occasion for its use in orchard trees.

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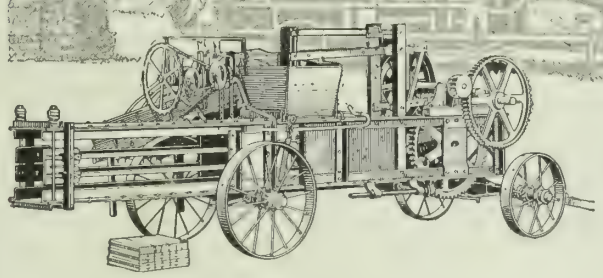

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A Hole-Full of Squirrel Problems.

To the Editor: I have some young orange trees surrounded by a great deal of wild, grass-covered territory and ground squirrels are playing "hob" with the trees—climbing up above the "protectors" and eating much bark and many young twigs and leaves. I have poisoned them by the scores but with no apparent effect on the invasion. I have sweet potatoes growing between the rows and they are doing very well except the outer rows which have been entirely eaten up.

Isn't there some way I can discourage the squirrels from climbing up the young trees or make them ill if they eat the bark. An injunction might lie but I doubt the ability of the courts to enforce it The only alternative I can see is to ask the authorities to prosecute my neighbors for not poisoning the squirrels on their land, but meantime they will go on eating just the same and I can't pay out large sums for poison. Possibly some of your readers have successfully combatted this pest. What law is there compelling adjacent owners to rid their lands of ground squirrels?—R. D. K., Sanger.

[You can keep rodents from eating leaves or bark by making a dope with commercial aloes, one pound to four gallons of water, painting it on the bark and sprinkling it on the leaves. It is too bitter to describe and nothing will eat it.

The last squirrel law passed by the California legislature is found in the "Monthly Buletin" of the California State Board of Health for September, 1913. The law was approved June 7, 1913, and gives Supervisors power to proceed against owners of property harboring squirrels, collect the cost from the owners, etc., but the law only works after the State Board of Health has declared that the county is harboring squirrels as a menace to the public health. It is a health law not a law for the protection of horticulture. If there is any way any law will help your trees, your county horticultural commissioner, Fred P. Roullard, whose office is in the courthouse at Fresno, can advise you about it.

To see how far the work of the U. S. Health authorities could serve your purpose, we submitted your letter to them and received the courtesy of the following reply:

FROM DR. J. D. LONG, U. S. PUBLIC HEALTH SERVICE.

To the Editor: Regarding the questions asked by your correspondent, I beg to state that the best method for destroying the squirrels in question would be the combined use of the Squirrel Destructor with poisoned barley properly applied. There is no method of treating the trees that will discourage the squirrels from climbing them; the only logical method is to destroy the squirrels, themselves. If there be any squirrel holes in the orchard proper, these could probably be treated to the best advantage with the Squirrel Destructor. The grass-covered territory adjacent should receive one or two careful treatments with poisoned barley and be followed up by the Destructor, to treat any live holes that may remain after the barley has been used.

There is inclosed herewith copy of the State Board of Health Bulletin which contains information as to the use of both these agents. Inclosed also a formula for the preparation of poisoned barley, which has been found to be even more efficacious than the poisoned grain mentioned in the report of the State Board of Health.

J. D. LONG,

Surgeon in Charge Field Operations. San Francisco, August 10.

AN IMPROVED SQUIRREL POISON.

A new formula for the preparation of poisoned barley for use in the destruction of ground squirrels:

Whole barley (recleaned)	18 lb.
Strychnine sulphate	1 ounce
Soda (bicarbonate)	1 ounce
Saccharine	1 dram
Thin starch paste	1 pint
Corn syrup (Karo or equal)	2 ounces

Dissolve the strychnine in hot water; thicken with starch to about the consistency of thin soup. Dissolve the soda in one-half pint of hot water and add a little at a time to the poisoned starch until effervescence ceases, then add the syrup and saccharine, mix well and apply to the grain, stirring constantly until the poison is evenly distributed throughout, and the grain is thoroughly dry.

S. E. Piper of the U. S. Department of Agriculture, the inventor of this formula, states that it is particularly advantageous on account of the fact that the bitter taste of the strychnine is delayed for several minutes and squirrels can pick up and place in their cheek pouches a considerable quantity before any bitter taste is noted; it is then too late for the squirrel to get rid of the poison, as enough of it has been absorbed through the mucous membranes of the cheek pouches to kill the animal.

Extensive experience with this type of poisoned barley has shown an efficiency far ahead of any other type of poisoned grain tested. Young or half grown squirrels have, in most instances, been practically exterminated and the percentage of adult or fullgrown squirrels destroyed is far higher than with other types of poisoned grain used.

[The "Destructor," mentioned by Dr. Long, and the material used for effective squirrel fumigation is advertised in our columns from time to time by the manufacturers thereof.—EDITOR.]

ALFALFA HAY FOR HUMUS.

To the Editor: In my continual rounds in this part of the State I am impressed with the innumerable huge pyramids of alfalfa hay awaiting in vain apparently for purchasers. Land owners and renters are becoming discouraged and many announce that they will abandon alfalfa for some other crop.

On the other hand, within easy reaching distance are hundreds of orange and lemon growers trying to increase the humus content of their groves. Stable manure is scarce and expensive. Alfalfa hay is abundant and cheap, with an actual plant food value several times that of the average barnyard manure.

As you know, I am preaching humus and finely ground phosphate rock here in California, and I have added to my duties the bringing together of the alfalfa man and the humus seeker. If the RURAL PRESS would emphasize the same thing it would help, and both parties concerned certainly need help. It appears to me a solution of a difficulty for the man who claims either lack of water or soil conditions for his failure to attempt cover crops.

Los Angeles. HORACE DUNBAR.

[The suggestion is surely pertinent. Alfalfa hay has been successfully plowed into citrus orchards and it is good for any land which needs humus, providing transportation cost is not too great and water for decomposition is available.—EDITOR.]

FRUIT FOR FARM ANIMALS.

[Written for the PACIFIC RURAL PRESS]

Sixty-six thrifty young grade Berkshire pigs are living on alfalfa and the culls from the 150-acre cling peach orchard of Nickerson & Short in Merced county. There is one danger in this, which is that the hogs crack open the pits and eat the kernels which contain an acid likely to be injurious. Dried peaches are being fed to animals in many places this season.

In a certain part of Tulare county a hot windy spell recently preceded a general souring of figs on the trees. This does not worry one gentleman who feeds them to the hogs and claims they make most delicious meat—as good as the raisin-fed hogs around Fresno, and better than the Zinfandel-fed hogs of Sonoma county.

Dr. J. Vought of Sonoma county, recently retired from prune growing on a small place, kept his horse in fine condition all winter and through the spring cultivation on cull dried pears and prunes, the latter of which she pitted skilfully and clean. Hay, of course, supplemented the sweet ration.

In order that you may be sure to get Select Stock of just the Varieties you want for the coming season's planting, book your orders NOW with one of the

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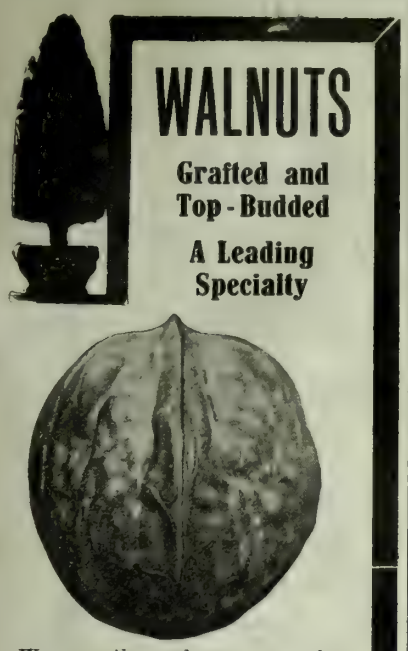

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Planting Citrus Trees.

[Written for the PACIFIC RURAL PRESS by J. E. ADAMSON.]

Having made sure of the hereditary habits of the stock from which the nursery stock has been budded, there is to be considered the form of the trees as affecting the future orchard. Has the nurseryman given the care which is best adapted to the production of a well formed and vigorous tree? From youth up to the time of transplanting, the tree should have been kept clean and straight, the only knot below the branches being at the bud, and this should have been close cut and carefully waxed so as to facilitate the healing over of the wound in a manner that leaves the bark smooth and the tree nearly straight. If the end of the ol dstem is exposed near the bud the wood will decay and fungus will soon attack and enter the tree, to appear in after years in disease of some sort. The young tree should have had such continuous good care that there is no hide-bound condition which will usually show itself in gumosis when the period of fresh growth comes.

In choosing the trees from the nursery row, select the most vigorous and clean, smooth barked specimens, then have them dug and balled with the end in view that the roots shall be injured as little as possible. Many promising young trees have been lamentably maltreated in this process of digging and balling. In fact, one strong objection to having the tree balled is that no opportunity is afforded to examine the roots. A purchaser called to my attention this season a tree on which the ball had been accidentally broken and the roots exposed. The tap-root was cut off at a point where it was about one-half inch thick and the feeding root system was poorly developed and very much short of wnat it should have been.

It is becoming more and more a question whether it would not be better to take more time in the establishment of the orchard and begin by planting the young seedling where it is to remain in position in the orchard, then budding to pedigreed stock, and so producing record breaking trees on roots that have not been injured by transplanting after the roots had begun to spread. The older the trees become in the nursery row, the more pronounced is the injury to the roots from careless digging and the more difficult it is to get satisfactory results from the planting.

The spacing of the trees in the orchard is another question over which there has been considerable controversy and about which nothing definite seems to have been settled; many of the best of the old groves are planted 20 feet each way, and so far as crop capacity is concerned seem to be quite as successful as those planted 24 feet. The main difficulty with close planting is a mechanical one, having to do with the working of the orchard. Many of the old groves have grown-in so much that a team rubs both sides in passing along the row.

The close planting is a distinct advantage when frost fighting comes to the front. It being much easier to hold the temperature up in a grove where the trees are large and cover a considerable portion of the ground surface than where trees are small and large areas of soil are exposed to facilitate quick radiation. I believe if I were planting a new grove in a location where frost conditions were known and fighting was to be expected, I would plant 20 feet apart in rows running crosswise of the air-drifts on cold nights and the rows 22 to 24 feet apart thus would impose barriers to the drift of the hot air and at the same time offer good opportunity for working the grove.

One of the best ideas in the actual planting which has come to my attention was put into practice by Mr. James Mills while operating the orchards of the Arlington Heights Fruit Co. at Riverside. The plan was to mix about a pound of dried blood with the earth when the tree was placed and the hole filled; then a deep furrow was plowed each side the row and at right angles to the direction in which the water would flow. For a short space near each tree these furrows were filled with manure and two pounds more of blood, then the furrow was back plowed to cover the measure. Thus for two years the young trees had food ready for the roots to lay hold on, and it might well be expected that selected trees planted and cared for with such foresight would make a record. That such a prediction was realized can be attested by those who were fortunate to have seen those trees bearing an average of three boxes of lemons per tree at the age of three years from planting.

Whatever the plan followed in planting, the young orchard will need good steady care. They should be protected before winter as a preventive against frost, even though the location is frostless; we have not yet forgotten the surprise of 1913 in the matter of frost districts. The best method of protection for any but the worst frost is to wrap them in cornstalks, standing the corn quite thickly about the tree and tying tight with small rope near the ground and again just below the top, leaving the top a little loose for ventilation. Some prefer the use of eucalyptus brush, and some good results have been had by its use. The tree should be staked before wrapping, as the increased bulk offers a good hold for the wind and may result in breaking the tree unless some support is given.

The care of a young orchard for the first three or four years should look rather to the building of a good tree rather than the production of early crops. The trees should be headed back just enough to make a strong, well shaped frame on which to carry a crop to perfection in later years. Don't let the branches grow long and slim and don't have them too close together nor cross each other.

Two or more branches coming out at one point cause a heavy strain which will most likely split the tree when under load. And don't forget that suckers from the trunk never make good limbs.

"No, Willie, dear," said mamma, "no more cakes tonight. Don't you know you cannot sleep on a full stomach?" "Well," replied Willie, "I can sleep on my back."—Good Housekeeping.

Mother: "Johnny, stop using such dreadful language!" Johnny: "Well, mother, Shakespeare uses it." Mother: "Then don't play with him; he's no fit companion for you."—Tit-Bits.

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Constructive Agriculture—No. 34.

CHEAPER DRIED PEACH PRODUCTION.

[Written for the PACIFIC RURAL PRESS]

At Merced is a big Muir orchard where they hand pick peaches for drying. Some of the men tell whether the fruit is ripe enough, by squeezing it. I've seen a man squeeze half a dozen peaches and leave them, but come back a few minutes later to that limb, and finding them a bit softer, squeeze them again and pick some of them. Other men in the same gang picked every peach they took hold of, because they looked at it first and saved a good bit of time and motion.

In this same drying yard are wisps of growing alfalfa, remains of a field plowed up, these plants having been encouraged to grow by an injudicious irrigation some time during this season. It made a nice drying ground, but when the peaches were taken from the trays, a large number were molded on the lower side, supposedly due to the dampness of the green alfalfa on which they had rested in rather unfavorable drying weather. The waste of the peaches and the labor of sorting raised the cost of production of those that were finally ready to market. And the mixture of undiscovered moldy ones added to the disfavor with which consumers view dried peaches, helping to keep the price down in general, squeezing the grower both ways.

At Clovis an association of farmers has a big drying yard to which the farmers bring their fruit to be dried at a cost of $30 per ton. When L. D. McCormick took charge of it five years ago, drying cost $36 per ton, but has been reduced by labor-saving short-cuts eliminating waste motions.

The noticeable feature of improvident farming as seen at this yard is that these growers, some of whom are selling below the cost of production, persist in sending their lug boxes of fruit to the yard three-fourths full. Since the cutters are paid by the box, they get paid for 400 boxes when they have cut only enough fruit to fill 300. Of course, what is bad for the farmer in this case is good for those who labor at the tables, so it isn't all bad.

At one drying yard inspected, the fruit was found in a shameful condition as brought from the orchards, and as cut on the trays. A large amount of it was so rotten that it wouldn't hold its shape when picked up to be cut. Yet that rotten, shapeless stuff was pitted and laid on the trays to help kill the market for dried peaches. From that mess of disease and overripeness, peaches could be found on most of the trays in all stages of ripeness and all sizes up to big green ones that couldn't take the sulfur at all. When dried, they were all colors from black to white and all stages of dryness, from those burned up to little shriveled skins, to those which had not much more than curled their edges.

This is an extreme case, and the man in charge had the grace to say that the color would be improved in the sulfur house and that the fruit would be sorted when put into the sweat box after drying; that he had tried giving orders to the cutters not to touch the rots, but when he did that, they left good peaches among them. The growers who picked them up might have left them on the ground to the improvement of the dried peach trade in general. There was much wasted labor in picking them up, in hauling them, in cutting, sulfuring and drying them, and in sorting them afterward. To throw out such a large percentage, doubtless hurt somebody's feelings, and so a great deal of unfit stuff was sold as dried peaches.

At one cutting shed, foreign girls stood in front of a table on which a tray was laid with its end at the lug-box full of fresh fruit. The girls would pick a peach out with the left hand, cut it, sway over to place it at the far end of the tray, then sway back to pick up and cut another. They were pretty fast, but 'twas an awful lot of waste motion and waste time. American girls on the other side of the shed spread out nearly enough whole fruit on the tray to fill it when cut; then stood centrally in front of the tray and lifted the peach only high enough to cut, then placed it back and cut the next one.

In another shed, the cutters worked in pairs on opposite sides of a narrow table with one tray between them. They sat sidewise to the table on lug-boxes, with the fruit in front of them and a little keg between their knees for the pits. They could reach for a fruit with the right hand while the left was placing the last one cut, on the tray at their side. When the left hand returned, it turned the fruit as the right hand cut it and gouged out the pit; and then placed the two halves while the right hand reached for another.

A very real way of reducing cost of dried peach production has of recent years been practiced south of Fresno. The fruit is not hand picked, but shaken from the trees onto the finely prepared sandy soil, by means of a slender pole with a flat hook on the end. By avoiding heavy jerks, only those that are ripe enough to dry come down, and boys and girls pick them up quickly, most of the dirt dropping off in the handling.

A. Thiele, of Oleander, one of the last to be forced into this system because it is so much cheaper than hand picking, has the greener peaches set aside by his cutters to ripen a few days. He has uniform sized fruit of uniform ripeness which sulfurs evenly and dries evenly, making a product that is a joy to see. It is dried in a cleanly way and if kept long on the ranch, is stored in the sulfur houses, so fixed that vermin cannot get in, and insects stay away on account of the sulfur. Were all dried peaches such as his, there would be less difficulty in holding the price above the cost of production.

ALMONDS ON MYROBOLAN ROOT.

To the Editor: Answering the request for experience with almonds on myrobolan root, in your issue of August 15, I will state that I would put almonds on myrobolan root upon the conditions which your correspondent describes. The myrobolan root is a good hardy root and a deep feeder and the almond works well upon it, and were I planting an almond orchard today I think I would put a greater part of it on myrobolan root. I do not think that you would have that occasional dying that you have with almond root. In an orchard of 100 acres you usually have one or two trees die yearly and apparently from no cause whatever. I never heard of that on myrobolan root. I think if I had a spot where almond rot failed and I wanted to replant almonds I would use trees on myrobolan root.

Davis. GROWER.

GROWING MEDICINAL PLANTS.

To the Editor: Will you kindly refer me to literature on the culture of herbs? Being interested in the raising of kitchen and medicinal herbs for market, I should be very glad of information on the following points: The kind of soil best adapted; the demand and how supplied; the securing of a market; the possible profit. Are these crops grown to any extent?—R. M. F., San Jose.

[The best way to get information concerning the growth of medicinal plants in California is to write to G. M. Homans, State Forester, Sacramento, for a copy of Dr. Schneider's report on "Pharmacal Plants," recently published as a State document and which will be sent free on application. You will find suggestions of the possible profitability of these plants in the report.

It is, however, not safe to enter largely upon the production of these herbs without ascertaining beforehand who your customers will be and what price will be available. They are not suitable for putting upon the general market. Special contracts are desirable before making investment of time, land and money.—EDITOR.]

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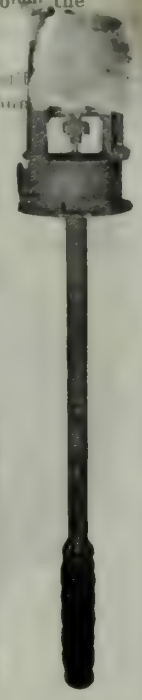

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Vegetables.

AND COLD FRAMES.

[illegible] us through the [illegible] when to make a "cold frame," or would a "hot-bed" be better? If so, how and when to make it.—N. M. C., Sacramento.

One who does not understand and practice the growth of plant seedlings on the side, for transplanting to permanent place several weeks later, makes his gardening harder and less likely to succeed. It seems, of course, easier to scatter the seed where the plant is desired to grow, and that is the act which many are apt to think comprises gardening art. Truly, however, this is not, on the whole, good gardening at all, though it may be the best for some plants and for some conditions.

The plant as it comes from the seed is least able to withstand adversity. Unfavorable temperatures, irregular moisture, thirst or suffocation by crowding of weeds, loss of root-hairs by burning crusts or by mud causing decay, injury by marauding insects—all these and others are perils of seedlings in the open ground From the point of view of the grower other considerations intrude; delay in waiting for temperature and moisture conditions which favor the start from the seed, causing the loss of that most desirable thing, the earliest possible growth which is consistent with safety; increased tillage of a larger area, which requires a maximum of labor and cost when seedlings are to be guarded from injury by tools; loss of opportunity to clean the land and to secure deep and complete working of the soil which a plant needs to make its quickest and freest growth, as soon as it has passed the perils of childhood as a seedling.

Theoretically nearly every plant we grow as a field crop would give us larger growth and product and the land would be more evenly occupied if the plants were grown in seed-beds and transplanted to the field, but the labor-cost would be greater than the value of the gain in quantity, the saving of seed, etc., and transplanting is therefore impracticable Where economic conditions favor it transplanting of field crops is practised, as, for instance, the transplanting of rice plants from seed-beds to fields by the Japanese and Chinese growers.

Seed-Beds.—Obviously, there are certain factors in transplanting which can be secured without production of artificial temperatures. In California for instance celery and onion plants for transplanting are grown in seed-beds without even protecting covers, the extra attention being given to the choice and preparation of the soil and securing proper drainage and irrigation as the seasonal conditions may require. The same slight requirements also apply to the growth of many seedlings of flowering plants.

It is also obvious that in California, where the temperature never falls as low as in lands with wintry climates, the arrangements for securing artificial heat, even for the growing of the tenderest plants, are very simple and consist, for the most part, in concentrating and storing winter sun-heat and preventing the intrusion of night temperatures. Even where artificial heat has to be actually produced, by circulation of hot air, hot water or steam, or by the rising of heat from fermentation of manure, but a few degrees of elevation of temperature are required and arrangements altogether inadequate in wintry climates are quite sufficient in California, in all but the high mountain districts. For these reasons in all amateur operations very simple, home-made, appliances are perfectly adequate.

Hot-Beds.—Hot-beds used in California are exactly similar to those used in colder climates, but they need less protection from outside temperatures such as is obtained by banking with manure and covering with mats, etc. They also need less active heat, such as is produced by partly spent manure or by using a smaller mass of fermenting material and they require, perhaps, greater watchfulness against over-heating and freer use of ventilating arrangements for admitting outside air. They also require attention to shading for even the California mid-winter sun is sometimes very fervid. Thus, though the construction of hot-beds here is similar to the traditional structures of colder climates, the use of them has to be guided by local experience and observation.

The construction of a hot-bed is indicated in Fig. 1. It is made of two-inch planks, spiked or bolted together, though for most uses one-inch redwood boards will serve as well as planks. It is in the form of a rectangular box, generally 6 ft. wide, because that distance is readily reached across from the sides, and as long as desired. The box should be so made that when the bottom is level, the sash will slope 1 in. to the foot, which will make it 6 in. higher on one side than on the other. This slope permits the sun's rays to enter more freely and allows water to run off quickly. The bed should be located on a southern slope if possible and run east and west with the lower side of the frame toward the south. If a southern exposure cannot be secured, a windbreak may be constructed on the north side and the ends to shut off the cold winds from these directions. The beds should be near a plentiful supply of water in order that the plants may be carefully and easily cared for. It is essential that a hot-bed should be located where water will not collect from rains or watering. Water must not stand in the soil occupied by the plants nor in the manure below. The whole outfit must be well drained.

Common horse manure containing no litter, mixed with from ⅓ to ½ its amount of straw or leaves, is used for providing the artificial heat. Straw or leaves are added to prolong the heating period of the manure and to keep it from heating too violently. The manure is gathered fresh from the stable, piled up and allowed to heat. Before fire-fanging, however, it should be moistened and forked over and allowed to heat again. During the heating it should be kept under shelter as heavy drenchings make it almost worthless. After it is well heated through the second time, it is put in the hot-bed excavation almost to the sash level, care being taken to spread it evenly and to have the corners well filled. After the manure has again warmed up it should be firmed by tramping. The bed is now ready for the soil.

Five or six inches of rich soil containing much humus and sand are then placed upon the manure and after the temperature of the soil has dropped to 90°F. most seeds may be sown. A good soil can be prepared by making a compost heap consisting of alternate layers of good surface soil containing grass roots if possible and barnyard manure, 8 or 10 months before it is to be used This will give a loose, rich soil very well adapted to hot-bed work. It is not necessary, however, with our abundance of good sandy loams to delay for such preparation. Any good garden soil with enough sand and fibrous material to take water well without baking will give good results.

The Cold Frame.—The cold frame is essentially a hot-bed without the heat. It depends entirely upon sun heat and protection from the chills of the night. It may be of lighter construction than the hot-bed and in ordinary use it is an advantage to have it easily portable or capable of being easily knocked down and set up again. Fig. 2 shows such a frame covered with sash and another covered with close-textured white cloth. Either of these frames can be also used as a hot-bed by tramping several inches of manure into it after it has been placed or a wide heap of manure can be made on the ground and the frame placed upon the top of it. Under California climatic conditions this simple recourse may be substituted for the more elaborate construction of a good hot-bed.

But the cold frame is generally used without artificial heat. Seeds may be sown in the soil-floor of the frame or they may be sown in flats or shallow trays of baked clay, or in wooden seed boxes for ease in taking up for planting out. Seedlings from hot-beds are often transplanted into cold frames for hardening-off before planting in the open. Care must always be had not to allow too much sun-heat even in a cold frame and partial removal of the covering during the heat of the day is usually desirable. The substitution of a lath cover for the glass or cloth is a good recourse as the season advances. By giving spaces equal to the width of the lath, a half-shade is secured.

Cold frames, Fig. 3, are often used in great area for growing vegetables or flowers out of season and in that case boards are held in place by stakes. Such frames are easily placed over perennials as they stand in permanent place and a degree of forcing secured after which the frames are removed and the plants allowed to make their later growth in the open air. Violets, etc., are often profitably forced in this way. One of the pictures shows cold frames placed in this way on a sloping piece of ground, the natural earliness of such a slope being hastened by such slight protection.

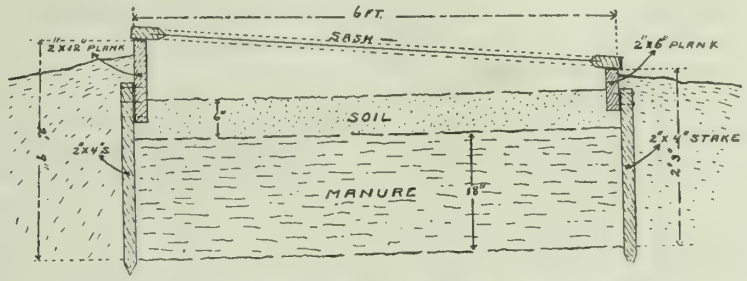

Fig. 1.—Sectional View of Hot-Bed Construction.

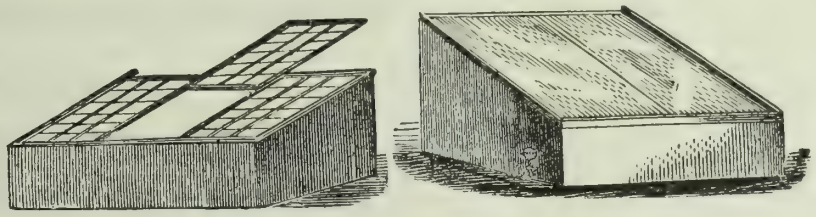

Fig. 2.—Cold Frames With Glass and Cloth Covers.

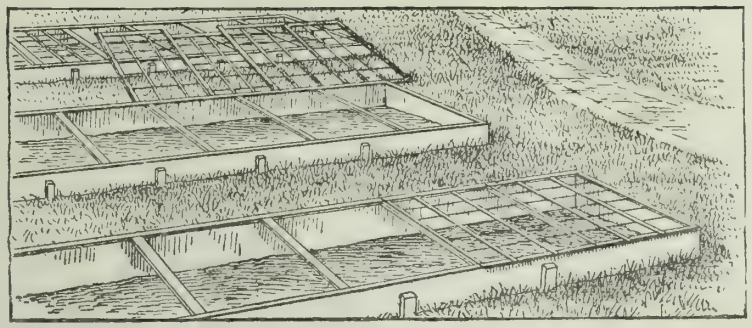

Fig. 3.—Cold Frames for Forcing Plants in Place.

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AGRICULTURAL REVIEW.

Deciduous.

Prune drying is about over in the Hollister and San Juan valleys, a half crop having been harvested. Deliveries have begun, and it seems that the marketing of prunes will furnish capital to handle apricots which are slow on account of the war.

Manager H. W. Ellis of the California Cured Fruit Association is getting acquainted with its locals. He was at Santa Rosa last Saturday. The Association seems not to have attempted organization very much in the Fresno district.

Dinuba's first car of dried peaches was shipped last week at low prices.

To ship a 10,000-ton cargo of Fresno county dried and canned fruits direct to Europe is a plan being urged among the growers, to double their returns and act as a world advertisement for Fresno. One to fifty tons from each grower are proposed, canned fruit being secondary, and grain a last resort to complete the cargo.

Government investigators of high prices of foodstuffs are asked by the Selma Chamber of Commerce to investigate the low price of dried fruits paid to the grower at the same time.

The Atwater cannery has been running light on account of slow ripening of the Phillips, which are about the only remaining fruits to be canned. They will be off in another week when sweet potato canning will soon commence.

In one day last week, the Selma cannery received 6,000 boxes of fruit from growers and put it up in 119,500 cans. The payroll for that day was $1372, one lady having made $8.48.

Lovells are being canned at Tulare and Visalia, while the Orange clings have produced a large crop at the usual low prices. The season there will last two weeks longer. It is estimated that the pack will be 25% larger than last year.

Bartletts are bringing $50 and $60 a ton at Stockton for canning, while all Nevada county Bartletts have sold at $2.12½ per box or over. It costs about $1 per box to market them. The grower who successfully fights pear blight surely has a good market.

The California Fruit Canners Association has a clause in all its contracts whereby in emergency such as the present war, they may pay for the fruit in three installments, 30, 60, and 90 days after delivery. They are not resorting to that privilege, but are asking the growers to avoid such a necessity by accepting only so much as each individual needs to harvest his crop, until the Association shall realize on some of its shipments.

Not all dried peaches cost 5 cents per pound to produce. For instance, a Fresno county orchardist has 6 acres of 12-year trees from which the crop is 10 tons. Another man delivered 52 tons fresh Tuscans grown on 5 acres of 5-year trees. Such big crops reduce the cost per pound.

An Inyo county orchardist advertises his yellow and white freestones in the local paper at 75 cents a crate delivered in town or 3 cents a pound at the ranch. Elbertas in Stanislaus county were recently advertised on a roadside sign at ½ cent per pound.

Placerville's fruit shipping season will be practically finished about next Saturday, at which time it is estimated 220 carloads will have been shipped The total for last year was 115 car loads. Some Eldorado county peaches sold last week in Chicago at $2 per box.

Bellflower apples are being picked in Pajaro valley—earlier than last year.

Citrus.

Sodium cyanide, which is being used for fumigating gray scale in Tulare county, may become scarce on account of the war. For, though it is made in the United States, the mines, which use German-made potassium cyanide, may have to depend on the sodium product and they have first chance. However, only a carload is needed to finish the season.

In Ventura county the hydrocyanic acid gas used for fumigation is generated in a horse-drawn vehicle and fed into the tents through a hose. In Tulare county, it is generated in an earthenware pot placed under each tent.

Fair Oaks citrus growers are taking warning from the seriousness of the gray scale in Tulare county and are adopting the Tulare methods of control.

Lemons in the Porterville district are earlier than usual, some having been already shipped. Big crops of good quality are indicated.

Oranges about Lindsay are larger than usual and probably will be shipped earlier than ever before.

Riverside total shipments to August 15 were 4,006 cars of oranges and 53 cars of lemons with the end of the season almost at hand.

Nuts.

The San Joaquin County Almond Growers' Association will have a "housewarming" at the opening of their new $5,000 warehouse and bleaching plant at Lodi, September 1.

Almond groves of Sutter county have been sprayed for red spider under direction of County Horticultural Commissioner H. P. Stabler, who advises also the destruction of all locust trees, which are favorable breeding places of the pest.

Almond harvest is on in the Oakdale district, where they have a full crop, about two-thirds of which will be marketed through the Almond Growers' Exchange, a local of which was organized some time ago.

The first almond shipment from the State was made August 19 from Butte county.

Walnut harvest in Santa Barbara county is on in full blast, earlier than before.

Nuts marketed by the California Walnut Growers' Association are to be put up in even 100-pound sacks.

Grapes.

It is in seasons of depressed prices such as rule in some sections on the Malagas now, that that grower, who has established a reputation for the honest pack under his label, comes out above ground both by means of higher prices and certainty of sale.

Eight cars of Tokays were shipped from the upper San Joaquin August 20, ten days earlier than last year's first carlot shipments.

Black Prince are slower ripening in the Lodi district than usual.

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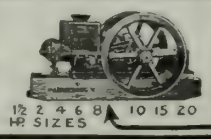

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503 MARKET STREET

J. S. Rhodes, manager of the cooperative packing house at Modesto, says that he will not ship unripe grapes, whatever the pressure, and has closed down temporarily. So soon as Malagas are satisfactory, he will open again, shipping also the Black Prince. He intends to put a few crates of peaches in each carload.

A specially big crop of Thompson Seedless is being cut in Sutter county where the 17% sugar content is being enforced and white labor used whenever possible, as recommended by the State Viticultural Commission. Many of the Thompsons will be dried.

Sultana and Thompson Seedless raisins are quoted by the Associated Raisin Co. at ¾c per pound more than the opening price last year. They will be sold at 5½c and 6¼c respectively in the 50-pound cases until January 1. The Thompsons in 1-pound packages at 7⅜c. It is announced that they "have no more 1912-crop raisins to offer for manufacturing purposes." About 1,000 tons were shipped in July.

Sutter county Thompsons had been contracted at about 6 cents.

Thompson Seedless are being stemmed and canned at Selma.

Kern county raisin picking began last week near Wasco. Kings county is beginning now.

Some Fresno county growers who had started to pick raisin grapes were advised to wait awhile to strengthen market conditions. Incidentally, it will increase the sugar content and hence the plumpness and weight of the raisins.

Vegetables.

Eight hundred acres of celery have been planted in Orange county, three-fourths of which is controlled by the Celery Growers' Association. Harvest begins in November.

Lima bean threshing in Orange county is embarrassed because of the big crop because ranchers dislike to pay the 30 cents per hundred pounds for threshing made necessary last year by the light crop. There are about 21,000 acres of limas in this county. Many of them were contracted at $4.75 per cwt. This is much less than the present rates as shown in our market reports.

Hughson (Stanislaus county) melon growers could not dispose of their crop through the wholesalers, so they sent a man to the San Francisco re-

tailers who made arrangements for direct shipments of melons that would otherwise have been wasted. This is self-elimination of wholesalers.

Bean canning in Lake county started last week. A heavy crop of fine quality beans is being put up.

December-planted beets turned out well this year, while many of those who waited till February and March in Tulare county lost their crops. But that experience seems likely not to be very beneficial this year with the source of our seed supply embroiled in war. The annual importation is 100,000 bags for California alone, of which only 900 bags, in Holland, are known to be available. Four hundred bags recently bought by cable for the Anaheim Sugar Co. cost them $40 a bag, a 400% increase. A small amount is produced in the United States.

The San Joaquin Valley Sugar Co. has finished a season in which it has handled 8500 tons of beets and made 20,000 sacks of sugar.

Atwater sweet potatoes dropped last week to $1.15 per cwt. Shipment has begun, but the main harvest has scarcely started.

Potato prices at Stockton are rising because labor is not available to dig the crop and orders cannot be filled. The foreigners who usually dig the potatoes are making more money in vineyards and hopfields.

Onion prices on the Delta are declining on account of the big crop everywhere in the United States, but the Japanese Growers' Association is holding for 75c per sack.

Irrigation.

A world's congress of irrigation men will meet in San Francisco in 1915, and 50,000 delegates are expected by the American Irrigation Association, under whose auspices it will be held.

Fair Oaks proposes a million-dollar project for the formation of a Wright irrigation district which will take over and extend the present system of that section.

Conventions.

The Inland Waterways Association will hold its meeting in Stockton September 24 to 26, at which time the big water transportation and reclamation problems will be discussed by highest authorities.

The Potato Convention will again be postponed, to secure the presence of Dr. W. A. Orton, former U. S. Department of Agriculture plant pathologist, and Prof. Wm. Stuart, in charge of potato investigations, as well as of Dr. Appel of Berlin, Germany, a leading European authority on potato diseases.

The American Pomological Society will meet in Berkeley September 1 to 3, 1915.

War.

Foreign-built ships have been admitted by Congress to American registry to allow commerce to continue safely under the American flag.

The Senate passed a bill creating a bureau of war risk insurance in the Treasury Department and appropriated $5,000,000 to cover losses to boats sailing under our flag.

A bill is presented to Congress asking $25,000,000 with which to buy Government-owned boats to insure shipment of American products to foreign ports.

Miscellaneous.

Seventy-five 10-pound boxes of dried Lawton and Mammoth blackberries and Loganberries are packed at Sebastopol to be exhibited in glass-topped boxes next year at the Panama-Pacific fair.

Nine farm advisers are working in as many counties of the State; four more are applied for, and the University has funds for only one more this year. Fowler vicinity is agitating to get that one.

E. O. Essig, secretary of the State Horticultural Commission, has resigned to work in the entomological department of the State University.

R. S. Vaile, county horticultural commissioner for Ventura, has resigned to work at the new citrus experiment station of the University.

The Panama canal earned about $55,000 tolls in its first week of business. Sixteen ships used the canal, fourteen American, one British, one Peruvian.

Lands under the Truckee-Carson project of Nevada will be thrown open to settlement, September 18, during the annual project fair at Fallon. Registrations will be taken September 2 to 16.

The Cuyama valley of 50,000 acres in Kern, Santa Barbara, Ventura, and San Luis Obispo counties, was recently opened for homestead settlement.

PAMPERING STRAWBERRIES.

To the Editor: My strawberry bed, which is in well fertilized adobe soil, seems to go entirely to foliage. My plants look splendid, but there are very few berries. I keep them well watered and the runners cut off. Can you tell me how to make them bear.—R. E. McL., Collinsville.

COMMENTS BY ALBERT F. ETTER.

It is a simple case of too much plant food, which overcomes the plant's desire to produce fruit. The natural habitats of the Chiloensis species of strawberry is on rather sterile soil or clear sand. While No. 80 is only part beach or Chiloensis, the Chiloensis dominates, and when placed in rich soil the plants simply go crazy in growing and forget all about reproducing themselves by seedage. The only remedy is to reduce the supply of plant food by less cultivation and water, giving them a taste of their former surroundings.

Briceland.

"Patrick, you were on a bad spree yesterday," said a friend, reproachfully.

"Yis, sor, I was that," replied Patrick. "Bless me, if I wasn't laying in the gutter wid a pig. Father Dunn come along an' looked at me; an' he says, says he:

" 'One is known by the company he kapes.' "

"And did you get up, Patrick?"

"Oi did not, but the pig did."

Two men were talking of the hard times.

"Does your wife ever grieve because she threw over a wealthy man in order to marry you?" queried Hall.

"Well, she started to once," was the reply, "but I cured her of it without delay."

"I wish you would tell me how," said Hall.

"I started right in grieving with her," replied the other, "and I grieved harder and longer than she did!"

"When I grow up and marry, mother, will I have a husband like papa?" asked Mary.

"I hope so, dear," said mother.

"And if I don't marry, will I be like Aunt Sue?"

"I hope so."

"Gracious," said Mary as she turned away, "what a fix I'm in."

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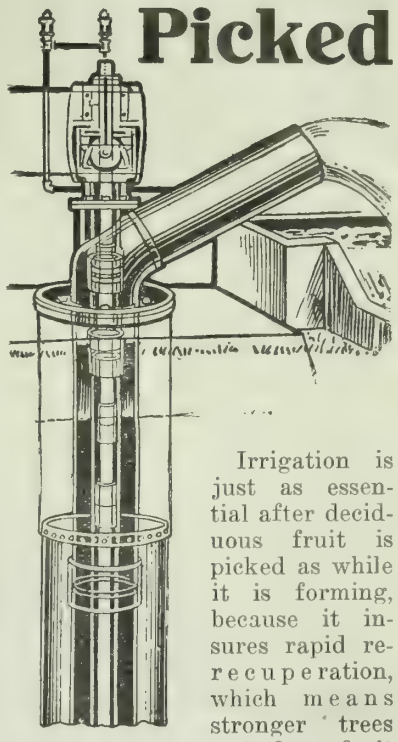
Irrigate After DECIDUOUS Fruit is Picked



Irrigation is just as essential after deciduous fruit is picked as while it is forming, because it insures rapid recuperation, which means stronger trees and finer fruit the following year.

Be prepared for Fall irrigation by installing the

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LOS ANGELES, CAL.

The Sonoma-Marin District Fair; Why It is Held

[Written for the PACIFIC RURAL PRESS]

Sonoma and Marin counties are to hold a real, dyed in the wool agricultural district fair, from August 31 to September 5, inclusive, bigger and better than ever before, even if the former generations believed some 25 years ago that they had reached the acme of perfection in staging agricultural shows.

And, pray tell, why shouldn't Sonoma county support a big agricultural fair, with her 27,500 acres of orchards planted and 200 acres ready for immediate planting, with over 20,000 acres of bearing vineyards, 70,000 acres of hay and grain land, 10,000 acres of berries, 4000 acres of hops, and a pasture acreage of 200,000 acres?

Then, too, the poultry and live stock, for who has not heard of Sonoma's poultry industry with an annual revenue of over $6,000,000 consisting of, we forget how many million dozen eggs? This with 60,000 head of cattle, 13,728 head of horses, 65,315 head of sheep, 18,423 head of swine, and 25,000 head of dairy cattle makes a tremendous agricultural total. But then there is also Marin county, with thousands of head of live stock as her chief industry.

Surely such a district needs an agricultural festival once a year for its own good, and what is more, they are going to have it, too.

If you don't believe it, just ask any resident of Sonoma county, and Santa Rosa in particular, what the prospects are for the coming fair. The reply, nine times out of ten, will indicate that the holding of a real live district fair has become a hobby in that section, and the gratifying part of the whole proposition, as we saw it, was that from one end of the country to the other, farmers, merchants and bankers are united in this belief.

Nor is this enthusiasm confined to the city merchant and hotel man, who hopes to directly benefit by the increased patronage during fair week, for everybody, including farmers, have actively solicited exhibits from other farmers, and in this way more good boosters have been made, for an exhibitor is more interested in the success of a fair than an outsider every time.

FOUNDATION FOR FAIR.—Although past history is sometimes uninteresting reading, we found that the foundation for this fair was largely laid last year, and that in turn the one of last year had been largely based upon an organization founded some 30 or 35 years ago, at the time when the district fair was first introduced in California.

At that time there were several fair associations, organized under the laws of the State, and for a number of years successful agricultural fairs were held in different parts of the State, Santa Rosa probably having been chosen as one, on account of its central location in the counties north of the bay region. This community, set off as it is from other agricultural centers makes the necessity of an annual agricultural show more apparent than in many sections where access to other fairs is more easily accomplished.

Along about 1889 the last of these fairs in Sonoma and Marin counties was held, and for the next 24 years the only activity manifested, so far as we were able to ascertain, was the annual meeting of the board of directors, which was appointed by the Governor of the State. During all of those years, however, the race track and fair grounds had been kept intact, for the training and racing of thoroughbred horses. This track has been the home of some of the fastest horses in the world, among them Lou Dillon.

On the face of it, that does not look to amount to much, but when agitation favoring the holding of last year's fair was started, about two months before the opening date, it proved to be a big help, first, because it furnished a place for holding the fair, and, second, and what was of great importance, it furnished an organization which is so necessary in successful management.

During those two short months the directors, with the aid of the chairmen of the different committees, who were in many instances farmers, worked up so much enthusiasm that they succeeded in gathering some $1500 through popular subscription, which, together with an additional $1500 secured from gate money; and $16,000 in stakes, given by the Pacific Trotting Horse Breeders' Association, constituted the prize moneys.

The same spirit of go-aheaditiveness that characterizes this year's organization made the fair entirely successful, and it is largely on account of that success that an added lot of boosters are verily working their heads off this year.

At the head of this year's campaigners is Edward H. Brown, whose official title is secretary manager, it being his job to see that every wire is kept working, including himself, from early morning until late at night, finding out what farmer grows the best apples, or who can be depended upon for an exhibit of fancy jams or jellies.

OFFICERS AND CHIEF BOOSTERS.—Back of the secretary-manager stand the board of directors, who are John P. Overton, president; Frank Muther, treasurer; A. W. Foster, J. T. Grace, A. B. Lemmon, W. H. Lumsden, C. A. Le Baron, J. E. Metzger, W. D. Reynolds, W. M. Rutherford, Leo Korbel, and F. W. Moddocks. Selected as they have been from the different sections of both Sonoma and Marin counties, makes this board far more effective than if they had all been chosen from some one district, for you must not lose sight of the fact that this is a district proposition, and that the word "district" in this case takes in a big territory of as fine an agricultural district as there is in the State.

To get the working plans onto a better business basis, however, another set of officers have been chosen, who are known as the chairmen of the different committees. They are: Finance, Milton Wasserman. Advertising, Jos. T. Grace. Exhibits, Santa Rosa district, W. D. Reynolds, Santa Rosa; Sebastopol, Graton and Forestville, F. W. Moddocks, Graton; Fulton and northern Sonoma county, J. E. Metzger, Geyserville; Petaluma and Sonoma valley, W. M. Rutherford, Petaluma; Russian River district, Leo Korbel, Korbel. Decoration, Frank Muther, Santa Rosa. Transportation, A. B. Lemmon, Santa Rosa. Races, W. H. Lumsden, Santa Rosa. Auditing, J. P. Overton, Santa Rosa. Stock, Sam Wright, Santa Rosa. Dairying, C. A. Le Baron, Valley Ford. Superintendent of Poultry, A. H. Currier, Santa Rosa.

Thus it will be seen that every chairman is held directly responsible for his own department and it is up to him to make good or lose all personal glory, for after all, that and the advancing of the agricultural welfare of his district are the only rewards he will receive.

Everything pertaining to agriculture is wanted; in fact, just must be had, for isn't this fair going to be a hummer, and doesn't it need Brown's big pumpkin just as badly as it does Squintville's big exhibit of varied products.

INCENTIVE FOR EXHIBITORS.—That this hobby for a big farm show is contagious, is apparent from the fact that the spirit has even entered the sanctums of such bodies as the board of supervisors, who appropriated $3000 for the coming fair, and the city council of Santa Rosa, who appropriated $500. Then there was a doubling up of public subscription money this year which amounted to $3000. This with the additional money taken in through gate receipts and entrance fees will bring the total premium lists up to $12,000, or an increase along the line of nearly three times the prize money appropriated last year.

Of this amount, $2600 will be given to agricultural and horticultural exhibitors, $2000 to livestock exhibitors, $800 to poultry, and the balance for racing purses.

Going through the premium list with secretary-manager Brown, we were told of the changes made here and there, all with the aim of giving the exhibitor the best possible premium, which in turn will make the fair more worth while to the visitor who has paid his admission fee.

HORSE DIVISIONS.—At the start he pointed out that while the classes in the draft horse division had not been materially increased in numbers over those of last year, the premiums

Some of A. W. Foster's Shorthorns That will be Exhibited at Sonoma and Marin District Fair.

and What It is Like

on Percherons, Suffolk Punch, Clydesdales, Shire, Coach horses, and Belgians, the latter being a new class, had been increased from $5.00, $2.50, and ribbon, for first, second and third, in the three year and over classes both stallions and mares, to $15, $7.50, and $2.50 this year. The two year and under three classes had been increased from $3, $1.50, and ribbon to $7.50, $5, and $2.50, and the one year and under classes had been increased from $2, $1 and ribbon, to $5, $2.50 and $1.50.

The same rate of increase was noted in the grade draft horse, pony, mule, get of sire, produce of dam, and carriage and road team classes.

One of the strikingly new classes in the heavy horse division is the special class for farmers' horses, which includes best four horse teams over 1300 pounds, best over 1400 pounds, best four mule draft team, best span of mules and four others of equal importance. An even $150 has been provided for these classes, and in view of the fact that entries need not be registered animals, there should be much competition brought out.

CATTLE DIVISIONS.—The beef cattle division was shown to be complete, with classes for Short-horns, Devons, Red Polled, and Herefords, premiums in these classes having been raised from $5, $2.50 and ribbon for three year olds and over, to $10, $5 and $1 this year. The two year and under three classes were raised from $3, $1.50 and ribbon, to $7.50, $5 and $1. Yearlings and under were raised from $2, $1 and ribbon to $5, $2.50 and $1. This applies to both bulls and cows.

Holsteins, Jerseys, Brown Swiss, Dutch Belted, Guernseys, and Ayrshires were also raised from the same premiums that the beef breeds received last year to those offered this year.

SWINE AND SHEEP.—Swine premiums have been increased from a total of $15 for each breed last year, to a total of $39 for each breed this year, besides an increase in herds and for sows and pigs. Poland-Chinas, Berkshires, Duroc-Jerseys and Hampshires being listed.

Sheep classes consist of Spanish Merinos, American Delaines, Rambouilletts, Dorset Horns, Shropshires, Southdowns and Hampshires, the premiums having been increased from a total of $13 for each breed to a total of $44.

Toggenberg, Angora and Saanen goats also come in for an increase in premiums, last year's total in each breed having been $6.50, while this year $22 has been offered.

HORTICULTURAL AND AGRICULTURAL.—In the horticultural and agricultural divisions, a noticeable improvement has been made in an endeavor to bring out the best that Sonoma and Marin counties produce in a fruit or general farm crop way.

Chickens and Apples Play an Important Part in Sonoma's Agriculture Industry.

Numbered among the more important of these exhibits are, the most extensive, perfect and varied exhibit of farm products grown by one farmer, best display of Sonoma or Marin county tobacco, best and largest variety of cereals in grain and in head, best sample of manufactured flour of Marin or Sonoma county manufacture, best sample of family flour of Marin or Sonoma manufacture, best display of hops, best display of garden and grass seeds, best exhibit of corn on cob, best exhibit of corn on stalk, best and largest display of Sonoma or Marin county grain in the sheaf, best and greatest variety of vegetables, best and greatest variety of potatoes, best and largest variety of pumpkin and squash, and best display of melons.

In the strictly horticultural department classes have been made for a general exhibit of orchard and vineyard nursery stock, for the best and largest collection of flowering plants, best exhibit of peaches, best exhibit of pears, best exhibit of apples, and best exhibit of grapes.

In dried fruits awards will be made for the best display of dried prunes and plums, best display of dried peaches, best display of dried apples, best display of pears, best and largest display of all varieties of dried fruits.

Classes have also been made for most meritorious display of pickled olives, best display of cultivated nuts, best display of grapes, best and most imposing exhibit of wines, made in Sonoma or Marin counties, best display of domestic jams and jellies, best display of canned and preserved fruits, and large premiums for the feature exhibits, with large bonus for special features such as apples.

Under dairy products, premiums will be given for both home-made and creamery butter, both home-made and factory-made cheese and of canned milk.

(*Continued on Page 210*)

Establishing a City Milk Dairy.

[Written for the PACIFIC RURAL PRESS]

During the past 10 months Santa Rosa milk consumers have acquired a new taste for milk, or at least a large part of them have had their palates educated up to a better, and more uniform, quality of milk during that time, and all on account of the ambition of two young men, just out of the College of Agriculture at the University of California, with advanced ideas on dairying.

When the Rathbone brothers purchased the 117 acres of land in the upper Sonoma valley, now known as the Wildwood Dairy, they had little but good intentions, a thorough knowledge of the fundamentals of dairying, and the confidence of a few city men who had the money to finance them.

Now, it has been customary in that section, in fact had been on this ranch, to keep dairy cows, but with no irrigation for alfalfa, it was usual to dry up the herd during the summer months, when there was little or no green feed available.

What more natural, therefore, than that a certain amount of ridicule be hurled at these young fellows, who inwardly expected to inaugurate an entirely new system in a section where the old-fashioned way had been good enough for so many years?

The former owner had been satisfied in keeping from 15 to 20 head of cows on the place, in fact had thought that about all the ranch would carry.

Perhaps it was all that could be carried under the old system of growing feed, but this is a story about the newer system, which allows the ranch to support almost 60 cows now and will later be made to do better.

At the start it was recognized that the 75 acres of bottom land had to produce more feed some way or other, and a part of that feed had to be preserved in a succulent stage; therefore, a silo was considered the one best bet, and a re-saw and studded one, with a capacity of 70 tons was erected.

Another time, we were told, a stave type silo would be built, as there has been considerable leakage with the studded one, even though it was built of good lumber and the work was done by carpenters.

Last fall the first cows were purchased, but only a few, for it was planned that one of the brothers was to do the plowing, seeding, and milking, while the other started to secure customers and attend to the delivery side of the business.

Oats, rye, vetch, and barley were sown on the bottom land, it being the plan to have early maturing forage, that could be fed green in the racks and siloed, for provision had to be made for the summer months when green feed is usually at a premium in that locality.

As before mentioned, the dairy at this time, October, was only a small one, the receipts for milk that month only amounting to between $16 and $18, but there was so much preliminary work, such as remodeling the old horse barn into a milking barn, with cement floor and stanchion room for 28 head of cows, that little attention could be given the dairy work.

Being 12 miles from Santa Rosa was a disadvantage for milk delivery, but this was remedied to some extent by putting a light auto truck on for delivery. There were some advantages to the ranch also, namely, the land was cheaper than closer to town property sold for, there were fairly good buildings on the place, the hill land made good pasture land and afforded a fine site for corrals, and lastly, there was a fine spring of water.

By the first of November things on the ranch assumed a more ready aspect, for the crop was in and the buildings in such shape that they would accommodate more cows. It was well that such was the case, for the trade was demanding more of this Wildwood milk and that month the receipts increased to $190. In December they had jumped to the $400 mark. Of course, this rapid increase meant a larger herd, and that in itself was some job, for all animals had to be free of tuberculosis before entering the herd, and such animals are hard to find in a hurry.

No advertising was done in building up the business, but at different times since the starting, three other milk routes have been bought out. The big increases came, however, through the quality of the milk, for great care was exercised in the handling of it, and every precaution taken to have it pure.

The Wildwood Dairy's Milk House.

The first milk-house was a small one, additions being added until the need for a large modern one was evident.

Now in building a milk-house, these Rathbones had gained, through their college work, a lot of valuable knowledge on what was required for clean handling of milk, and while the cost was a serious factor, they made plans for one which suited their ideas.

The plant as finished is a model of convenience and is strictly sanitary,

having as equipment a two and a half-ton ice machine, sterilizing vat, bottle washer, steam boiler, clarifier, pasteurizer, milk cooler, milk bottling machine, and refrigerating plant.

The building is well ventilated and lighted, has cement floors and cement wall all around the building about two feet high, and contains two rooms, one for the ice machine, boiler, sterilizing vat, and washing apparatus, while the milk is all handled in the other room.

"Will a business where the milk is sold for $2.50 a quart a month, stand such expensive equipment?" we asked.

"We do not believe so," was the reply; "in fact, we expect to raise our price shortly, and it's up to the consumer whether he wants the kind of milk we produce bad enough to pay us for our trouble. As quick as we get straightened around, we will produce a milk with a bacteria count of 10,000 or less, at which time we will have to raise our price. Until we can inaugurate that standard, we can only hope, for while we are anxious to produce a high-class article, we are not philanthropists in any sense of the word. If they won't pay, we will be compelled to drop back to our present standards, which at that are the best in this section, we are told."

That is another "if" though, and what we started to tell was what has actually been accomplished. As the feed proposition looked, at the start, to be the hard nut to crack, it might be well to explain how the new system has worked out.

During the winter months there was some pasture on the hilly land. This was good, but more feed was needed. Some baled alfalfa was purchased, but the life saver proved to be wet brewer's grains, purchased at the brewery in Santa Rosa and hauled out on the auto truck. When the supply of this is plentiful, about 20 pounds a day are fed to each cow; other times alfalfa meal is fed with it to make the required amount.

By the first of April, the oats, barley, vetch and rye were ready to be fed green in the corrals, and supplied a lot of good feed after the pastures were used up.

Along about the first of May these crops were ready for siloing, it requiring about 20 acres of hay to fill the silo. The balance was made into hay and will furnish horse feed for the rest of the year.

Plowing and seeding to corn followed the hay harvesting as soon as possible, for from that time on every bit of moisture counted, no irrigation being available. It is hoped, however, to irrigate at some future time, and try to grow some alfalfa also, for water can be had for pumping purposes in good sized quantities from a spring on the ranch.

At the time of our visit, early in August, silo filling was again under way, the hay silage having just been exhausted; this time with the corn, which had been drilled in and was running about 7 tons to the acre. Another year the yield will probably be better, as more care can be given at that time.

The harvesting and filling was being done by four men, one man in the field, spending all of his time cutting with a sickle, another dividing his time between cutting and loading. One team and two wagons are used, the practice being for one of the other men to help unload at the cutter and then drive the empty wagon back to the field where a loaded one awaits him. In this way there is always a wagon in the field. The man who feeds the cutter takes advantage of the time consumed by his helper in driving to and from the field, to tramp down the silage inside of the silo.

At present the herd consists of grades, picked up here and there, but all are tested for tuberculosis twice a year, and a registered Holstein bull is being used on them now. In this way the future cows will be better producers than their mothers, although we were informed that the herd was averaging two gallons of milk a day at this time, and that the test for the herd varies between 4.5 and 5 per cent fat.

During the past month a three-unit Sharpless mechanical milker has been installed, electric power at the milk-house furnishing the power. There were two reasons for installing the machines; first, on account of sanitation, and secondly, on account of labor troubles. Now the milking is done by one of the owners, a hired man doing the washing of cows and floors, and also carrying the milk to the milk-house.

Since December the demand for Wildwood milk has continued to increase, which has compelled the owners to purchase large quantities of milk from nearby dairymen. At present the milk from nine other dairies is handled, most of this being first run through the clarifier and pasteurizer and then sold in cans to the wholesale trade. Most of the milk produced on the home ranch is sold in bottles and that is the way that all of it will be sold later.

Instead of a few gallons last October, some 250 gallons are now delivered daily, and this supply is even short of the demand. With this amount it has become necessary to purchase a larger truck, a one-ton one now being in use, but even that is too small, all of which seems to indicate that there are many possibilities in our older dairy sections which only require more modern methods of developing to make them pay handsome profits.

VETERINARY QUESTIONS.

[Answered by Dr. E. J. Creely, San Francisco Veterinary College.]

DANGER OF ABORTION.

To the Editor: I would like to know what abortion comes from. Is it catching from the air, or if I let my cows out on pasture can they get it from my neighbor's cows, which are also on pasture, on the other side of the fence?—M. K., Keyes.

Abortion is infectious. It is dangerous to keep pregnant cows where other cows have aborted. The Bureau of Animal Industry, Washington, D. C., publish a bulletin on this subject which is available to cattle raisers.

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Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

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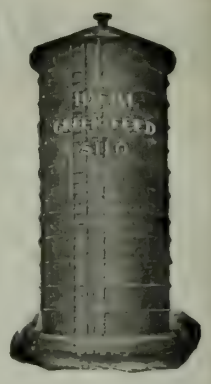

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AS A MATTER OF FACT, THE COST of a silo is really a secondary consideration, because if you are keeping dairy cows or raising stock for the market, there is no investment you can make that will pay you better returns that an IDEAL GREEN FEED SILO.

A GOOD SILO IS A NECESSARY PART of the dairy equipment of every cow owner or stock raiser who wants to realize a reasonable profit from his herd, and if the matter of cost has been standing in your way, please remember that it is really not a question of whether you can afford to erect a silo, but whether you can afford to do without one.

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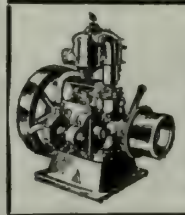

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With the Live Stock Men.

Dairying.

The Petaluma Co-operative Creamery recently had its books audited by a public accountant, for the first six months of its career, up to July 6, 1914, says its manager, W. B. Hopkins, "we have made 364,000 pounds of butter at a manufacturing cost of 1.46 cents per pound. However, we have no expense for hauling cream or butter and we do not pack in cartons. We paid for butter-fat as follows: 4 cents over San Francisco quotations for January, 3½ cents over for February, March, April and the first half of May, 4 cents over for last half of May and all of June." The net profit available for dividend after six months' operation was $4,326.96.

Highest official records of Ayrshire cows are shown on a sheet received at our office. Mature cows, 102 pounds butter from 2323 pounds milk in one month. Yearly records: Mature, 3.77% fat, 606 pounds butter; four-year-olds, 3.80%, 534 pounds; three-year-olds, 3.61%, 554 pounds; two-year-olds, 3.44%, 398 pounds. The highest fat percentages among these yearly records are 4.05, 3.98, 4.26 and 4.73.

A Holstein sale of at least 100 cattle will be held by members of the Holstein Breeders' Association at Hanford directly after the county fair.

Thornton Glide will be showing only young stock this year and at only a few of the fairs. The premiums, he says, at several of the fairs, do not pay the expense of fitting, and the people attracted to some of them do not seem to be the kind that makes the stock sales worth while.

R. B. Briggs is to stock a 200-acre ranch near Turlock with Holsteins and go into dairying.

Tulare, Visalia, and Tipton creameries paid $66,838 for July butter-fat amounting to 215,458 pounds. Kings county creameries paid $130,000. Imperial county receipts for butter were reported to have increased $12,000 a day when butter rose from 22 to 28 cents per pound there.

Marysville health authorities are insisting on a cleaning up of the dairies supplying that city.

A pasteurizing plant to raise the return to the dairymen of Esparto district from 10 cents to about 16 cents

A co-operative creamery is being strongly agitated in Kern county and many signers obtained.

per gallon is another co-operative project which might include 1000 cows.

Thin cream gets a body blow if the patrons of the Visalia co-operative creamery stand back of their manager, who has just announced that 2 cents a pound less will be paid for cream which does not average 30% butter-fat. His object is to hold high the standard of butter output. Cream grading is to be established only by overcoming the hardships such as this creamery will probably have to fight, but it is a worthy cause.

Swine.

C. B. Cunningham of Mills writes that he has immunized his entire herd against cholera by the double treatment.

Holt & Gregg Co. of Anderson lost nine hogs from cholera but saved the rest by timely use of serum, and have shipped two carloads since vaccination.

State Veterinarian Keane thinks hog raising in the Sacramento valley is not progressing as it should with cheap alfalfa and out of sight prices for pork. He says they could be alfalfa-fed for six months, fattened for two months, and sold at 200 pounds.

Eleven Yolo county High School boys are raising pigs to exhibit at the State Fair for $60 in prizes. This money is open to all High School agricultural clubs in the State. The Yolo county boys are engaged in a county contest, too, in which the animals will be judged in September first on their initial and present value, second on individual merits, and third on the essay to be written by each boy on "How I Raised My Pig." Each contestant will get a trip to the University Farm, and the winner in each High School gets a trip to Washington, D. C., under auspices of the University.

K. C. Keane of Fairfield recently lost 250 tons of baled hay, a driving team, and two mules by fire, without insurance.

An epidemic which has been spreading among the swine herds around Santa Rosa has been declared hog cholera by a representative of the State Veterinarian who made a thorough inspection of herds in that section last week.

C. B. Cunningham, of Mills, Sacramento county, writes that he has recently received two very fine registered

(Continued on page 211.)

CALIFORNIA BREEDERS FIRST CONSIGNMENT SALE

100 REGISTERED HOLSTEINS 100

HANFORD, October 28, 1914

Consignors:

A. W. MORRIS & SONS.....Woodland
McALISTER & SON.....Chino
R. F. GUERIN.....Visalia
G. A. HEWITT.....Hardwick
T. J. GILKERSON.....Stratford

All Stock Tuberculin Tested. Catalogs ready about October 10th. Write for one.

JAMES W. McALISTER, Jr., Sales Manager, Chino.
Col. BEN A. RHOADES, of Los Angeles, Auctioneer.

Watch next issue for descriptive ad.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

DAIRY CATTLE.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warder herd bulls, both sired by $17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO. McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars, J. W. Benoit, Route 2 Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M Holdridge, Modesto, Cal.

REGISTERED JERSEY BULL for sale; ready for service. H. M. Barngrover, San Jose, Cal.

REG. JERSEYS—Herd established 1868 Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS — Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg Jersey Bulls for sale. R. 4, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Short-Horns. Prices on application. Hopland, Cal.

REG. HOLSTEINS—Bull calves, Juliana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS — A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE — Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE. McAlister & Son, Chino, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Shorthorns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa.—Registered Berkshire hogs and Jersey cattle.

SWINE.

BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder. "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

REGISTERED POLAND-CHINA HOGS —Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS — No better anywhere. Boars, sows, and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

FOR SALE—Young Berkshire sows and boars from registered stock. Brae Bourne Ranch, Route 3, Box 69, Santa Rosa, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

POLAND - CHINAS—Fifteen head 11 months gilts, open or bred, of prolific kind. Geo. V. Beckman, Lodi, Cal.

BERKSHIRES—Utility and choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompsan, Novato, Cal.

YOUNG REGISTERED BERKSHIRES —Boars and sows. Reasonable prices. Enterprise Farm, F. C. Cuthill, Newark, Cal.

POLAND-CHINAS. Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

THOROUGHBRED DUROC - JERSEY weanlings for sale; Colorado King on Kansas Sunflower stock. M. Manson, Bellota, Cal.

REGISTERED POLAND-CHINA SWINE —Prize winners, finest stock in State. $30 p. M. Bassett, Hanford.

PURE-BRED BERKSHIRE BOARS for sale; ready for service. H. M. Barngrover, San Jose, Cal.

REGISTERED O. I. C. SWINE—Special sale of young sows. C. D. Conway, Lakeport, Cal.

DUROCS from first-prize winners State Fair, $15.00 up. Ed E. Johnson, Turlock, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE —Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

DUROC-JERSEY BOARS — Weanlings. Lindquist Bros., Turlock, Cal.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

PURE-BRED DUROC-JERSEY PIGS. E. CURTIS, Napa, Cal.

POLAND-CHINA HOGS — C. A. Stowe, Stockton, Cal.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

SHIRE HORSES—Stallions, mares and colts of the best breeding, both imported and home-bred, for sale at reasonable prices. Henry Wheatly, Salvador Stock Farm, Napa.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS — Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder o. French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets, Hanford, Cal.

Hogs Essential in Cattle Finishing.

With the growing interest in beef finishing on alfalfa land, which is being manifested on all sides this year, there is one favorable factor to be considered, which may oftentimes be overlooked, and that is the profits derived from hogs following the cattle in the feed lots.

While it is doubtful whether beef finishers in this State will ever be able to feed corn for fattening purposes, other grains such as barley, Kaffir corn and sorghum will without doubt play an important part.

Just what the relative value of hay feed from corn-fed steers compared with barley, Kaffir corn, or sorghum-fed steers is, we are unable to state, but it is not likely that any large margin exists, and for that reason, data secured by the Department of Agriculture on 24 Iowa farms during the feeding year beginning in the fall of 1909, should be of interest here.

The first season the average profit on 961 cattle fed in bunches was $2.05 per head, not counting the profits on hogs following them. The prices received for the cattle were very satisfactory. The 1504 hogs following these steers, and which were given extra grain, were sold in the spring of 1910 with a profit of $6.67 per hog, which, if credited to the steers, gave a profit of $12.49 per steer. In the following feeding year, 1910-1911, prices were unsatisfactory, and this caused a loss of 78 cents per head on 1138 cattle fed on 28 farms. The 1646 hogs following these steers, however, returned an average profit of $3.33, and when this profit on the hogs was credited to the steers, there was a net profit of $4.04 per steer.

The number of hogs to follow a steer will depend on the method of feeding. Some farmers feed the steers more corn than they will eat, and run extra hogs, figuring on the hogs getting the waste. While this may be a good policy when corn is cheap, it is doubtful if it should be practiced with high-priced grain. It is usually best to figure on about one shoat per steer when shelled corn is fed and two when ear corn is fed. In case the corn is ground or soaked, or silage is used, the number of hogs would be less. The aim should be to run enough hogs to clean up all waste corn.

The daily gains that hogs make will depend materially on the condition of the feed yard. They will also be affected by the quantity of grain given and the form in which it is fed. In general, it is probable that when a steer is fed one-third of a bushel of shelled corn a day, approximately three-fourths of a pound of pork will be obtained. When ear corn is fed the gains will be greater. On the other hand, if corn meal or corn-and-cob meal is fed the amount of pork produced is very small, as the grain is much better utilized by cattle. In fact, experience and experimental evidence show that when corn is most efficient for steers it is least so for hogs, and vice versa.

The gain will be greater if the steers are fed some leguminous hay or some concentrate high in protein, such as oil cake. Nearly all farmers give the hogs corn in addition to that secured from the droppings. Corn for the hogs should always be fed away from the cattle and should usually be given first, so that the steers may not be annoyed. The hogs should also be provided with separate watering places and separate places to lie down.

It has been definitely shown that hogs following steers on paved lots make nearly one pound more of pork per bushel of corn fed to steers than do those in ordinary mud lots. Moreover, with the unpaved lot it frequently happens that a period of warm weather occurs during the winter and the lots become very muddy, making it necessary to ship cattle before they are ready. This sometimes causes a congestion of the market, with a consequent drop in prices. The feeder who is forced to ship because of muddy lots may lose more in one year than the cost of paving. Not only will the cattle make better gains, but animals that are covered with manure are usually discriminated against to the extent of 10 to 15 and sometimes 25 cents per hundredweight. If the manure is dropped in open yards and exposed to the weather much plant food is lost. On the other hand, with that dropped on paved floors and in sheds, the losses may not be so great.

DAIRY BUILDINGS AT WHITTIER STATE SCHOOL.

[Written for the PACIFIC RURAL PRESS]

In a former article a description of the dairy herd and management as seen at the Whittier State School was described.

At that time, however, construction of the new dairy buildings, was just beginning and we were unable to describe them.

Since then the following described buildings have been erected at a cost of $5500, a great deal of the labor having been performed by the boys of the school.

The barn consists of a milking and feed room 32 by 182 feet, and an ell 32 by 110 feet, devoted to box stalls. Directly connecting, on the west side, is a concrete silo, flanked by a brick cutter-house. The corners formed by the ell are used for runways and a feed yard.

The milking and feed room is of brick and concrete, with ventilated roof and glazed windows. Electric lights will be provided in adequate number. The forty-eight stalls are provided with James stanchions, and face the center of the room. On the walls behind the stalls are ten hydrants, five on each side, providing means for washing the cows after their daily currying. Gypsum is used on the floor, and after the dry fertilizer is removed, all the remainder is flushed into the gutter, in the cement floor, through a 6-inch pipe, out to the main irrigating ditch of the farm. By this means there is avoided the loss of a large amount of valuable fertilizing material which is a loss on poorly equipped dairy farms.

The feed room will have compartments for the storage of dry feed, and a room for receiving chopped hay. This will be blown in from the cutter after the silo has been filled for the season.

The silo itself is perhaps the equal, if not the superior, of any in the State. It is 32 feet high and 20 feet in diameter, inside; capacity about 350 tons; built of reinforced concrete, including roof. The reinforcing is steel rods, 4 to 6 inches apart, both vertical and horizontal.

The old silo was a well built wooden structure, and was abandoned because its joints were becoming loose. The inside being smooth and strong, it was utilized as the outer wall of the cement form, for the new silo, and provided much better construction for the purpose than could have been otherwise secured with the funds available.

Behind the silo is the cutter-house, with a No. 9 Ohio combined cutter and blower, which was already on hand. The ensilage is blown to the top of the silo; the chopped hay will be blown to the feed room, and will represent a considerable saving by the use of the coarser stalks which the cows would otherwise waste. A tramway leads from the silo and feed room to all feed racks.

In the ell are two brick and concrete bull-pens, with strongly fenced runways, where the two high-grade bulls are cared for. A third bull-pen is constructed of cement, brick and heavy timbers, for the use of the younger animals and for emergencies. Next come two box-stalls for calving or for sick animals. At the end next to the milking room are two calf pens, with home-made stanchions, which carry an interlocking device made at the school, which i[illegible] useful innovatio[illegible]

The cows are [illegible] official tests for b[illegible] duction, for purpos[illegible] registry. Of course the cows are [illegible] now tested, and their records kept; but for the purpose mentioned the present tests are not official.

The initial utility of this fine herd of Holstein-Friesians has many sides and angles. It is a source of income; the cash received from sales of young stock forming in the aggregate no small sum. Milk and butter for the use of the boys and officers is all provided from this source, adding another large item of cash value. But, important as these points are, there is still another value which might be said to equal them both; and that is the utility of these fine animals in the development and reformation of the boys who are employed in their care.

A great airman was talking at a tea-party to the pretty girl of his heart.

"Tell me," said the girl, as she took her nineteenth sandwich, "tell me, does flying require any particular application?"

"Well, no, none in particular," came the answer. "Arnica or horse liniment—one's as good as another."

Don't Feed Butter Fat to the Hogs

To get every ounce of butter fat from your milk, the bowl of your separator must spin swiftly and smoothly. This requires a special oil. The oils you use on your other farm machinery are not suited to the delicate, high speed mechanism of the separator.

Standard Hand Separator Oil

is of just the right body to quickly reach those finely adjusted, close fitting bearings. That is why it will give you perfect lubrication. If a better separator oil could be made, we would make it. Dealers everywhere.

Standard Oil Company
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San Ramon Shropshire Flock
Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

With a stick for the 8-Hour Law.

There has been so ut the proposed 8- that I would like to add the opinion of a woman. We own a small ranch in a neighborhood of small ranches. We formerly kept one hired man for choring and keeping up the place, taking care of poultry, etc., throughout the year.

In the haying season, of course, we hired about five extra men. Now, with the employers' liability law we are afraid to keep hired help, for should some accident befall the men, for which we were absolutely not responsible, we would be held liable. Consequently, one laborer has lost a good steady job and good home, and if the proposed 8-hour law goes through instead of hiring the extra men for haying, we shall exchange work with our neighbors who formerly hired help and thus among five or six farmers do all our own work as best we can, and what we can't do we shall leave undone, which will mean the loss of a few jobs to the laborer.

Formerly when we kept a steady man, we kept the lawn cut and orchard plowed and ditches cleaned and many things my husband has to neglect now, but we feel we must do the best we can and take no chance of some employee getting injured and paying him damages which we are not able to afford.

Neither can we afford to carry extra insurance for some other man. My husband carries several thousand to protect his own family, but why should a small land owner who has accumulated a little home by working long hours and saving his money be obliged to carry insurance to protect some man who has had the same chance in life but has spent his money—perhaps for whiskey.

If the laborer wants insurance protection let him take out his own insurance and pay for it like a decent member of society and not like a public charge. There has been enough imposition in past legislation on the decent citizen who has tried to accumulate without enacting this ruinous 8-hour law. They can argue all they want to that we should hire more men for the same work. We cannot afford to do it and we will not do it.

Why should a woman have to cook for three or four men instead of two to do work that two men ought to do? The farmer's wife will have to work harder than any of the hired men.

If we can't work on the co-operative plan we will be compelled to lease to Japs or foreigners who have large families and can work the ranch without outside help. When the Canal is open to traffic and European immigration sets in here, as it surely will, this will be the outcome: the foreigners with large familiies will do most of the farming and the floating farm hand can hie himself to pastures new, as he will probably want to do any way if the "dry state" carries. If the farm laborer thinks he is being benefited by such legislation he should wake up. I am speaking from personal knowledge. Since the liability law passed, among our own acquaintances I know eight farmers who formerly kept a steady man who do not keep one at all now.

If a canvass were taken of the whole State, I think you would find thousands who have managed to get along without help rather than take the extra risk. With an eight-hour law there will be tens of thousands.

If the co-operative plan is not practical, instead of hay, grain, and fruit we will raise hogs or stock that requires little help to manage.

Of course, such a measure would be absolutely ruinous to the orchardist or vineyardist who is absolutely dependent on help, but they can lease to the Japs who can work it among themselves and they certainly will not give employment to the white man who is trying to make this State, through such foolish legislation, fit place only for Japs.

I am a native daughter and loyal to the backbone, but if such fantastic legislation continues as it has in the past, California will be a mockery to the civilized world.

We women, who have now the right of franchise, should wake up and take a hand instead of allowing the government of our State to mollycoddle the riff-raff and hoboes who are only looking for a chance to prey on the decent members of society.

Bakersfield. A WOMAN READER.

[Gee: we wish we could hit a thing hard like that!—EDITOR.]

A COUNTRY WOMAN'S VIEW OF THE 8-HOUR LAW.

To the Editor: I am only a plain country woman but feel I must say something in regard to the proposed 8-hour law. I read each issue of the RURAL PRESS and find the 8-hour articles extremely interesting with the exception of the one Mr. Hillers wrote for your issue of July 11.

He does not claim to be a farmer, and it is my firm belief he is one who had work on the state highway, but lost his job as the hours were too long. This highway has been in course of construction from Healdsburg to Santa Rosa—distance 16 miles—for the last 16 months by men who work or rather pretend to work 8 hours per day and are paid $2.50 for their hard labor.

I live on this road and have watched the men kill time—and ask every thirty minutes how near time it is to quit, so they could draw their $2.50. I have also noticed that if one man worked too hard he lost his job.

The 8-hour law would affect most of all the farmer with the small place as he could not afford to hire the extra help.

Mr. Hillers says: "A cook is a poor cook who cannot prepare 3 meals in 8 hours." I wonder if he ever cooked a meal for twelve people in his life. I quite agree with him that any cook could do it in a way, but he probably would not care to board with that cook. If the meat, vegetables, fruit, etc., were brought directly to her, and one of the extra farm hands would, while he is resting and for sociability with the cook, wash the dishes, but as a general rule a woman who cooks on the average farm has to sometimes gather the fruit and vegetables, buy the meat or dress chickens; churn; answer the phone and a hundred other little things to take up the 8 hours the proposed law would allow her.

We have hired considerable help during fruit season while we have been on the farm and I can honestly say, transient white help, which the farmers in this section are compelled to hire, is quite indolent enough without encouraging it by being so utterly foolish as to pass an 8-hour law. The majority come here and have no food or money and about the time you are in the rush of harvest, they either get a thirsty spell or a longing for travel, so roll up their blanket (if they are cold blooded enough to possess such an article) draw the few dollars or cents due them and leave—"thereby working for your interest after you have treated him better than a mule."

Another point which has not been discussed in your paper is this: Years ago in our grandparents' time, when men and women and their large families of children all worked hard, and long hours, often times doing the chores after the evening meal, there was far more happiness and contentment. There was less drink and divorce than at the present time and there were more boys and girls contented to settle on the farm than now. What will it be if people are such fools as to pass an 8-hour law and give laborers still more time in which to get into mischief?

I for one feel the farmer (and he is the one who would suffer if such an unjust law was passed) has brains enough to realize that it is not going to better the working man to pay him $2.50 per day (whether he earns it or not) and allow him only 8 hours in which to do it. It will only encourage the majority to ask for a little more cash and a little less time in which to earn it.

Just thirty minutes to prepare dinner for a hungry man—but I can do it, Mr. Hillers, for I am a swift cook—have a fine oil stove and best of all, my lemon pie is baked. I wish I could give you a liberal piece for I feel that a man who would write a piece like yours in the RURAL PRESS of July 11 deserves a piece of lemon pie or—a lemon.

SUBSCRIBER'S WIFE.

Santa Rosa.

BLACK HAWK STOCK RANCH

Shire Stallions and Mares, both imported and home bred, of the best breeding, for sale. Inspection invited. For particulars apply

Address HARRY CLARK, Burlingame, Cal., or
DR. J. B. DALZIEL, 530 Fulton St., San Francisco, Cal.

50 COWS AVERAGE 717 POUNDS BUTTER.

This is the average of the 50 cows that have completed yearly semi-official tests to date, in our herd, and only 15 at mature age.

Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.

INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as $150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention.

A. W. MORRIS & SONS CORPORATION.
Holstein-Friesian Cattle. Woodland, Cal.

CHOICE CHEAP CONCENTRATED

MODESTO ALFALFA MEAL

For

CATTLE POULTRY SWINE

For Prices See or Write

THE GRANGE CO., Modesto, Cal.

MILKING MACHINES

We have the Agency for the BEST Mechanical Milking machine on the market. 3 carloads of these machines are in our salesroom. We want you to see our practical demonstration of this Milker. If you will send us your name, we will mail you a booklet on milking machines, and other dairy supplies.

KELSEY DAIRY SUPPLY & MACHINERY CO.,
818 S. Los Angeles St., Los Angeles, Cal.

Poultry Crop is Short This Season.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Pessimism is not my creed, so I don't want our readers to think this is just the result of a bad liver or a case of indigestion, because those are things that never trouble me—if they did I should go outdoors and walk them off.

No, this is not a pessimistic prophecy, but genuine information from the interior States. Reports from all over the country are coming into that effect. The editor of the A. P. W. says he lately made a six weeks' tour through the Central West and down South, visiting Chicago, Kansas City, Oklahoma City, several Texas cities, New Orleans, Memphis, and St. Louis. At all points the information he got from well informed poultrymen was that there was a shortage. Poultry supply men confirmed this information.

The shortage is not because of neglect in hatching, but mostly because of infertility in eggs. Fertility ran uncommonly low during the early part of the season.

The poultry supply dealers say that sales have been about one-third off this spring. Now these men are in a position to know, if anyone does. Anything that affects sales is bound to be known by those who have the goods to sell.

The A. P. A. convention met in Chicago and are bewailing the fact that, owing to the war, poultrymen will not be able to import any fine-feathered birds from France, Belgium, or England. This affects the Campines, the Houdans, Favorolles, and Orpingtons. Well, if that was the worst thing war did, we could manage to wiggle along some way—we surely have a few fine feathers on this side, hid away somewhere.

But the shortage should remind those who have good hens that are worth keeping, that if they want winter eggs it is time the hens were into molt to get their new dress before winter. If poultry are scarce, it is a foregone conclusion that eggs will be scarce, too, and we need to get the pullets and hens in trim for winter laying. This cannot be done in a minute; it takes time, and this is as early as it is possible for those that have not already started.

GREEN FEED.—To help along the molt there is nothing more necessary than plenty of green feed; if you have not got it, make it. The way to make it is to plant some quick-growing stuff. If you have no irrigation water, just soak some oats or barley over night and make it grow. It is a little chore, but it will pay big dividends in winter eggs. I prefer the barley; at present it is cheaper, and again it helps most wonderfully in loosening the feathers. By proper feeding it is possible to have the new feathers growing in as fast as the old ones drop, and that is the most natural way for poultry to molt. Give them a good wide ration and help it along. Cracklings soaked in water until soft, then fed in a piece, or boiled with vegetables and mixed in a mash is a good help.

But to sprout the barley, it can be done so easily this warm weather that it is very little trouble. Soak it about eight or ten hours, leaving the tub, or whatever it is soaking in, stand in the sunshine. Then pour it out into a sack or two, if you no box, and let it stand all night so. In the morning spread the barley out in the sack, about two or three inches thick, and sprinkle the sack just enough to keep the barley moist, not wet. If it gets wet it molds and then it is a loss. Every morning just stir the contents of the sack with the hand, then sprinkle again. It should be ready to feed in three or four days. Sprouts are best when about an inch long.

It is not so much of a green feed to look at, but the elements of the grain are changed into something quite different from just plain barley. If you have boxes or even a frame with wire netting on, the soaked barley can be put onto the ground in a sunny spot and shaded by sacks being laid over the wire frame until the sprouts begin to show, then the sacks may be taken away and the barley just let to grow as long as it is wanted. When sprouted this way it makes more green feed and can be cut out in blocks and fed to the hens a little at a time. Barley sprouts much quicker than oats, but it heats very quickly if not stirred up good at least once a day.

Any kind of green vegetables or roots are especially good when there is a shortage of other green feed, and if nothing else can be had, dry beet pulp will be better than an all-grain diet.

I have fed the beet pulp and found the fowls liked it best when wet up and mixed with about half its quantity of bran, adding a little salt. The beet pulp soon soaks through (about one hour is long enough), and it is better to feed it when the birds are a little hungry the first few times; afterwards, when they get used it, it can be fed any time that suits.

Another thing that I have found helpful when green feed is scarce, is a bale or two of nice green alfalfa hay. If it is scalded with a kettleful of water and a little salt sprinkled on it, the hens will eat it up as clean as a whistle; and don't forget that alfalfa is very high in protein and that it takes vegetable as well as animal protein to grow feathers.

GOOD WEATHER FOR VERMIN.—Don't neglect to look over the chicks, especially those that have been with hens. It is a good idea to go along after dark, with a can of insect powder and examine those brooding in boxes and odd places. I generally leave the young ones where the hen was confined, if it is at all possible, then I know there is no danger of them getting far wrong. And these should be looked after, but it is getting time everything was housed now and the pullets separated from the cockerels.

When young birds are put in a new house and it is desired they shall perch, it is better to put in a few older ones that have been perching; they will teach the young ones better than you can and much easier. But don't trust too much to them for the first few nights; it is safest to be on guard to see that there is no crowding. If all the corners in a house are made up, there is not much fear of crowding, as chicks rarely bunch up in the open.

Tack a piece of one-inch wire across all the four corners before turning chicks that have not been taught to perch, in a new house. They will be tolerably safe if that precaution is taken, but unless it is, it will pay to go to the house after dark and see how things are; it may save a lot of chicks, and at any rate some sickness.

HOW TO CARRY POULTRY.—Now does not that appear a simple thing to write about, and yet only a few days ago a man near here was catching chickens and carrying them by the legs to his coop and one died right in his hands. He asked me about it, and when I told him it was through carrying it by the legs in the heat of the day he was surprised. He asked how he should carry them. "Well," I said, "there is but one safe way in hot weather, and that is to carry them under your arms. By putting one hen well under the arm it is easy to grasp another by the legs with the hand and hold it upright, too. Thus four can be carried at once, and even if it takes a little longer and a few more steps, the job will be done safe and humanely.' It may not strike some folks as being cruel to carry fowls by the legs, but it certainly is, especially on a hot day. The head being down and the blood rushing to it, how can it help but be cruel?

Anyway his hen died and it was all right before, so he got a lesson, but the poor hen had to lose her life for him to get it.

This is a funny old world, and yet the world is all right; it is we human chumps that are funny, half of us don't believe a dog has teeth till he bites, and then we say, "who would have thought he would bite."

VENTILATE YOUR HOUSES.—These warm days we like a window open while we sleep, and so do the poultry. Raise your hen houses up from the ground about four inches, so that the fresh air can get in from all sides, and the hens will enjoy their nights better than when the air only comes in through the front. My houses are all open front, but small houses with low roofs will get extremely warm when the hens are gone to bed, so we adopted the plan of raising them and putting a four-inch block under each corner, and now it is a pleasure to go in the houses and find everything so nice and cool after a hot day. The hens not only look better, but they are laying better, and I really believe that this change is responsible for a good number of eggs. I believe in trying out little things like that, then if they help, tell others about it and help them, too. It's the little things in life that count most, anyway.

The hits you made yesterday don't win today's game.—Kellogg's.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds, and other varieties. Capacity, 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 396, Los Gatos, Cal.

PETALUMA HATCHERY—Now booking orders for Fall. August, September and October chicks are highly profitable. Send for circular. L. W. Clark, Petaluma, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

INCUBATOR CHICKS—White Rocks and White Leghorns. High class stock. Send for booklet of prices. Mahajo Farm, Box 597, Sacramento, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, $7.50 per 15; utility, $2 per 15, $10 per 100. C. J. Struby, Concord, Cal

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

EGGS FOR HATCHING—Pure-bred White Rocks, $1 per setting; $6 per 100; until September 1. Mrs. J. B Tupper, Ceres.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

HOPLAND STOCK FARM—Incubator chicks, S. C. White Leghorns and White Plymouth Rocks. Hopland, Cal

CHICKENS, DUCKS, GEESE, GUINEAS Pea fowl. Address Wm. A. French. 545 W. Park St., Stockton, Cal.

BUFF AND WHITE ORPINGTONS Mrs. S. Swaysgood, Route 2, Pomona Cal.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

Molting Time

is apt to be a time of trouble with your hens.

COULSON'S EGG FOOD

will help to keep them in good condition, saving loss and worry.
A healthy hen will molt quickly.

COULSON COMPANY
PETALUMA, CAL.

FREE BOOK

Raising Calves without milk. Everything you need for stock and poultry raising. Write today.
F. F. SMITH & CO.,
1006 J St., Sacramento.

PACIFIC PIONEER

FISH MEAT MEAL FOR POULTRY

Important

Always look for the star within the circle, and you will never buy an inferior fish meal.

Guaranteed to be the best egg-laying, health-giving meat food for poultry on the market today.

(Send for free sample and prices)

WESTERN TALLOW COMPANY
38 Beale St., San Francisco

WITH THE LIVESTOCK MEN.

(Continued from page 207.)

O. I. C. boars from the east. One of these was purchased from A. M. Foster, of Rushville, Illinois, and the other from I. M. Fischer of Kansas City. He is also buying seven gilts of the best blood lines obtainable.

Horses, Sheep and Beef.

Average value of the 498,000 California farm horses has decreased from $109 to $100 in the past year, and their number has decreased 5000, according to a report of the U. S. Department of Agriculture. The average value for the United States is $109.32.

Several of the draft horses being imported from France and Belgium, by Ruby and Bowers of Davis, will not reach here in time for the State Fair as planned, on account of the war in Europe. The present war if continued will work a great hardship on importers in this country and the supply of imported stock will likely be very short the coming fall.

The Marysville Woolen Mills may open soon if the European war continues.

Ten carloads of sheep were recently shipped from Jungo, Nevada, to Marysville, Cal.

Thornton Glide of Yolo county is shipping two cars of Merinos to New Mexico.

The fall wool clip began at Oroville last week, part of the shearers coming from Nevada.

The Porterville Alfalfa Co. is importing 475 head of feeder cattle from northern Arizona. This brings the total to 1200 cattle making cheap alfalfa into high-priced beef on this ranch.

F. D. Campbell & Co. of Tulare shipped 118 head of two and three-year-old fat steers to Los Angeles, where they sold at about $75 each.

From present indications the number of agricultural fairs to be held this year will greatly exceed those held last year both in number and size. Among the new fairs to be held this year are the Ventura County Fair at Ventura, with L. P. Hathaway as secretary and the Rice Exposition at Gridley, Butte county, which will also include live stock exhibits. The first named will be held late in September while the latter will be held September 3, 4, 5, and 6. Besides these there will be the Sonoma and Marin District Fair, at Santa Rosa, August 31 to September 5; the Alameda County District Fair, September 23 to 26; the Fresno District Fair, September 29 to October 3; the Kings County District Fair, October 5 to 10; the Riverside County Fair, October 13 to 17; and the Nevada State Fair, at Reno, September 21 to 26.

The Board of Supervisors of Fresno county have approved plans for a new cattle exhibit barn, to be erected on the Fresno District Fair Grounds. It is planned to have the building ready for this year's fair.

Entries to the State Fair were to close August 12, but on account of delay in getting out premium lists, the entry limit was extended to August 25.

Premium lists of the Alameda county fair have recently been received showing a comprehensive variety of classes, especially in livestock; and good premiums for the rest of agriculture. The University will have an exhibit not competing for premiums, but in charge of a special lecturer. Dean Hunt will lecture on Farm Bureau Day, on "How to Develop California."

Preliminary classifications for the Pacific International Livestock Exposition to be held at Portland Union Stock Yards, December 7 to 12, have been received. Over $15,000 cash premiums will be paid. There is no charge for entry, stall room, or admission; and no amusement features, the show being intended to be purely educational and inspirational along lines of stock improvement, hoping to be to the West what the International is to the East.

"Henrietta," said Meekton, "I don't think women would ever care to be soldiers."

"Why not?"

"Soldiers' uniforms are so much alike. No soldier can have the slightest curiosity about what another soldier has on."

Warranted to Give Satisfaction.

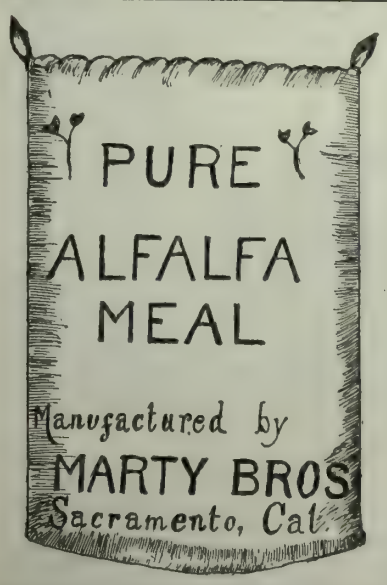
Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.



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Write us for prices in ton and carload lots.

RHOADES & RHOADES

EXPERT LIVE STOCK AUCTIONEERS

Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.

1501-3-5 So. Main St., Los Angeles.

THE SONOMA-MARIN DISTRICT FAIR.

(Continued from page 205.)

POULTRY.—In the poultry division the following breeds are specified in the premium list, American, Asiatics, Mediterranean, English, Polish, Dutch, French, Games, Game Bantams, Orientals, Ornamental Bantams, miscellaneous, turkeys, ducks, geese and pigeons.

OTHER REASONS FOR SUCCESS.—Now the thing with any fair, is not solely dependent upon what a variety of things are listed in the premium list, but how many of those classes are well filled, and it is here that the work of the above named directors and their assistants counts for most. This fact has evidently been recognized, for as we buzzed Secretary-Manager Brown, in the fair headquarters at the court house, there were two workers just leaving for the country by auto in search for exhibits, while three different parties were waiting outside for information regarding rules governing exhibitors. This happening almost two weeks before the opening date, August 31, struck us as about the best evidence of the widespread interest which these people are manifesting in their district fair.

Another thing which appealed to us was the word passed out that there is to be no "night show" on the fair ground, but instead all carnival stunts are to be pulled off in, or near, the business section of town, thus insuring every attendant, that promoting the agricultural interests is the one and only ambition of the directors. One thing appears certain, namely, Sonoma and Marin counties will make Santa Rosians aware of the fact that the agricultural district fair is the biggest and best educational proposition held, from an agricultural standpoint, in the coast section, from San Francisco to the Oregon line.

A man wearing a worried look went into a shop which advertised a patent slug exterminator, and asked for a hundred pound sack. The amazed assistant calmly said:

"Certainly, sir; but that quantity would be sufficient to destroy all the slugs in Alameda county."

"I know that," was the reply. "They are all in my garden."

"Well, well," he exclaimed, as he tcakled her first meat-pie, "where did you get this?"

"I made that out of Mrs. Shorter's cookery-book," replied the young wife. "It's a——"

"Ah!" he broke in. "This leathery part is the binding, I suppose?"

Cholly—"When I was a boy, you know, the doctor said if I didn't stop smoking cigarets I would become feeble-minded."

Miss Keen—"Well, why didn't you stop?"—Boston Transcript.

CLASSIFIED ADVERTISEMENTS.

Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

LAND FOR SALE.

VICTORIA, AUSTRALIA WANTS SETTLERS

Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

320-acre well-improved farm will be sold cheap if sold at once. 640-acre stock and dairy ranch, well improved and well watered. Will sell 50 head of cows and young stock with or without the ranch. For particulars write C. P. Gould, Box 27, Parkfield, Monterey county, Cal.

FOR SALE—67-acre ranch one mile from Durham, 20 acres in 5-year-old almonds, 10 acres in 5-year-old English walnuts, 10 acres in 3-year-old Mission olives; balance in alfalfa and grounds. Plenty of water to irrigate same. Address the owners, COOLEY BROS., Durham, Cal.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg., San Francisco.

FOR RENT OR SALE—1018 acres of grain and alfalfa land near Williams. H. V. Traynham, College City, Cal.

READ my advertisement on another page. I have just what you are looking for in lands. G. M. Rea.

TREES AND NURSERY STOCK.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

BEES.

It pays to keep bees on the farm; raise your own honey, make considerable profit besides. We can supply gentle Italian bees at $3.50 for five-frame colony, $5 for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. SPENCER APIARIES CO., Box 12, Nordhoff, Cal.

WANTED.

SUPERINTENDENT for 1000 acre citrus and deciduous orchard, grain, alfalfa, hogs and dairy property. Thorough California experience absolutely essential. Very liberal compensation to competent man. Box 226, Pacific Rural Press.

WANTED—To buy a car of wheat, also one of Milo maize or Egyptian corn. Mail samples and state price. E. A. Walker, 605 South Bristol street, Santa Ana, Cal.

WANTED—Working foreman for hay and stock ranch; must understand general farming. Experienced up-to-date man needed. References required. Address Box 297, Yreka, Cal.

WANTED—A capable man for ranch foreman; must understand general ranch work. R. D. 2, Box 70B, Modesto, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

WANTED—Dairyman to run large dairy on shares. Box 124, Pacific Rural Press.

FOR SALE OR EXCHANGE.

FOR SALE—Gas Tractor, 4 cylinder, 7½ inch diameter, 8 inch stroke. Will do the work of 32 horses. Good as new. Address C. H. Jensen, 502 E. Weber ave., Stockton, Cal.

Alfalfa or Barley Hay of excellent quality, either 1913 or 1914 crop. Will exchange for hogs or dairy cows. Address William Rasmussen, Esparto, Cal.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

IN THE FALL MONTHS every farmer requires manure, lime and fertilizers. Now is the time to figure on your wants. Address, for information, Box 10, Rural Press.

"SMITH'S PAY THE FREIGHT." To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

The Home Circle

Woman's Influence.

The ideal which the wife and mother makes for herself, the manner in which she understands duty and life, contain the fate of the community. Her faith becomes the star of the conjugal ship, and her love the animating principle that fashions the future of all belonging to her. Woman is the salvation or destruction of the family. She carries its destinies in the folds of her mantle.—Amiel.

In 1881 there died at the Academy of Geneva, Switzerland, a quiet, retiring professor, Henri Frederic Amiel. He had not done very much in a literary way, nothing of world interest; but when, a year after his death, his "Journal" was published he was at once recognized as a writer of rare ability and charm. All through the "Journal" one finds the most suggestive and helpful thoughts as well as much enjoyable reading.

What higher conception of the possibilities of woman's influence could there be than that in the above quotation? He never married, but he certainly had a clear understanding of child nature, as shown in the following quotation:

"Self-government with tenderness—here you have the condition of all authority over children. The child must discover in us no passion, no weakness of which he can make use; he must feel himself powerless to deceive or to trouble us; then he will recognize in us his natural superiors, and he will attach a special value to our kindness, because he will respect it. The child who can rouse in us anger or impatience or excitement feels himself stronger than we, and a child respects strength only. The mother should consider herself as her child's sun, a changeless and ever radiant world, whither the small restless creature, quick at tears and laughter, light, fickle, passionate, full of storms, may come for fresh stores of light, warmth and electricity of calm and of courage. The mother represents goodness, providence, law; that is to say, the divinity, under that form of it which is accessible to childhood. If she is herself passionate she will inculcate in her child a capricious and despotic god, or even several discordant gods. The religion of a child depends on what its mother and its father are and not on what they say. The inner and unconscious ideal which guides their life is precisely what touches the child; their words, their remonstrances, their punishments, their bursts of feeling even, are for him merely thunder and comedy; what they worship—this it is which his instinct divines and reflects.

The child sees what we are, behind what we wish to be. Hence his reputation as a physiognomist. He extends his power as far as he can with each of us; he is the most subtle of diplomatists. Unconciously he passes under the influence of each person about him, and reflects it while transforming it after his own nature. He is a magnifying mirror. This is why the first principle of education is, Train yourself; and the first rule to follow, if you wish to possess yourself of a child's will, is, Master your own."

The first quotation might well be an inspiration to our daughters as well as to mothers, and the second might well be the morning lesson from which fathers and mothers or all who have the care of children might draw strength to realize its ideals.

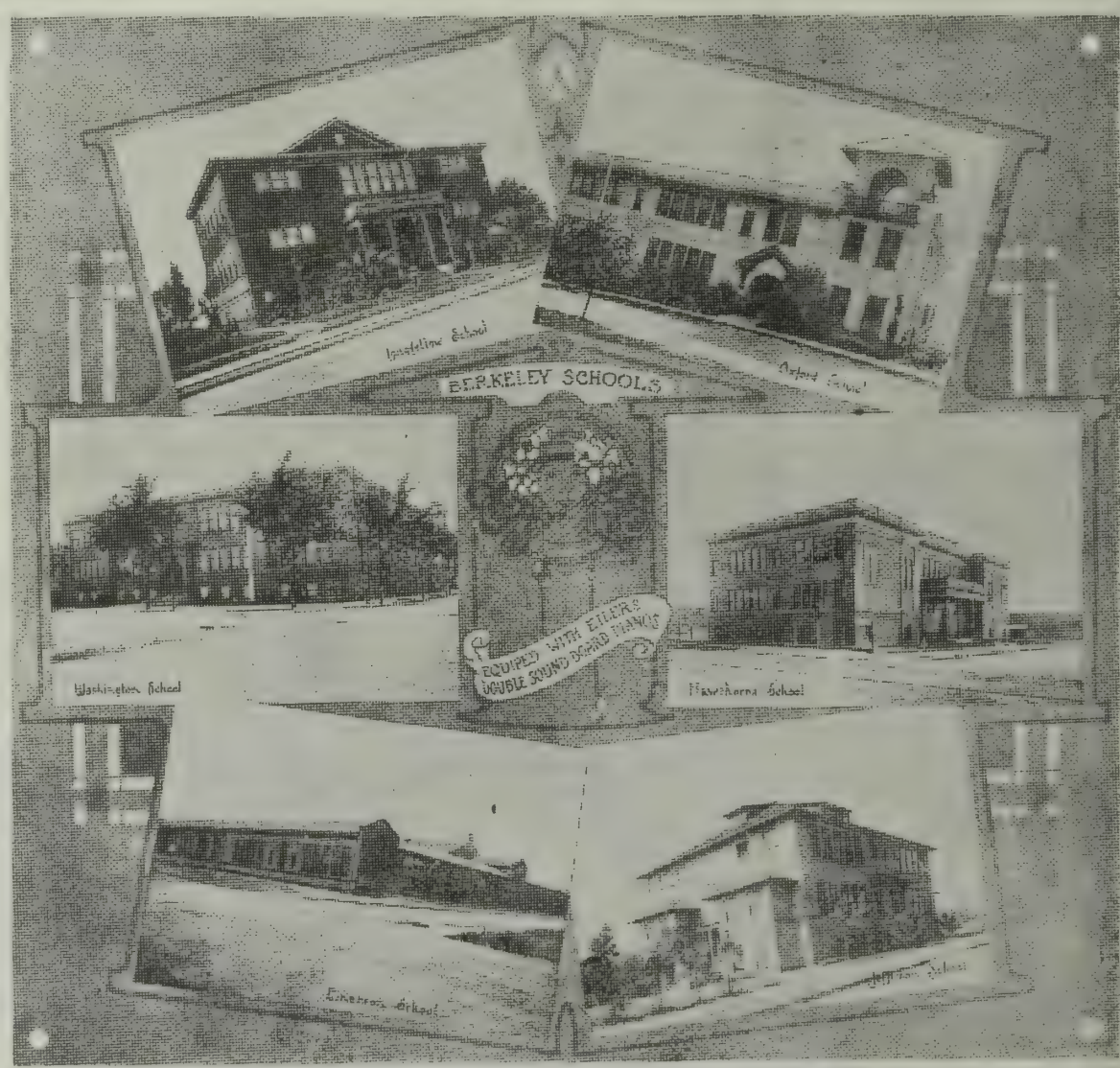
The first one, hand printed and illuminated by one who had some skill, and framed or not, would make a beautiful present to a woman. We hope that both quotations will be cut out and preserved and that thus will these true words of Amiel bear fruit in the lives of many of our readers.

Excitable Party (at telephone)—"Hello? Who is this? Who is this, I say?"

Man at Other End—"Haven't got time to guess riddles. Tell me who you are."—Boston Transcript.

Berkeley's Fine Schools Equipped With Fine New Pianos

Berkeley School Board Has Awarded to Eilers Music House the Contract to Equip the Beautiful New School Building With the Now Famous Patented Duotonal (double sound-board) Upright Pianos, Manufactured Expressly for Eilers by the Famed Haddorff Piano Co., Who Also Make the World Renowned Homo-Tone.



After much careful and exhaustive investigation and most critical comparison of quality and of prices for pianos which were submitted by virtually all of the music houses around the bay, the Berkeley School Board unanimously decided to equip all of the beautiful new school buildings with the new piano built under the now famous double sound-board system patented by Eilers Music House.

The pianos have been delivered to all the schools pictured above.

Mr. McArthur, sales manager of the San Francisco and Oakland stores, was very happy over the merited recognition that had been thus generously and publicly accorded his house and these pianos.

"Our bid was by no means the lowest," said Mr McArthur yesterday. "It was not a question of price, but the thought uppermost in the minds of the committee was to secure the very highest quality, the utmost durability, the most attractive case design and finish, and above all, to secure the greatest duration and singing quality of tone. All of these features were pre-eminently to be found in our pianos, hence the big order.

"We are quite confident that this high honor bestowed upon us by the schools of Berkeley will be instrumental in interesting many other educational and professional authorities as well as private homes in this excellent and most unique piano."

These wonderful double sound-board pianos are the latest achievement of H. J. Eilers, President of Eilers Music Co., who has devoted a lifetime to improving the sound-board which is the soul of the piano. A large portion of the Huddorff Piano factory at Rockford, Ill., is devoted exclusively to the manufacture of these instruments, which are made under plans submitted by Mr. Eilers and under his direct supervision. Musicians and music lovers are cordially invited to call at our warerooms, 975 Market St., and have this wonderful new piano with the double sound-board explained. You will find it well worth your time from an educational standpoint.

EILERS MUSIC COMPANY

The Big Market Street Piano Store

975 Market St., - San Francisco

Enough Sleep for Children.

Jean Williams, M. D., who is conducting a department of advice to mothers for Woman's Home Companion, says in the October issue:

"Let me say a few words to the mothers who forget that their growing children need long sleeping hours, in order that healthy growth shall be continued and a well organized nervous system become established. It is especially important that good judgment shall be exercised during puberty. Great physical demands are made at this period, and the wise mother makes every effort to avoid for her children unnecessary dissipation of energy.

"It is not easy to state definitely the number of hours of sleep required, as there are individual requirements that will materially modify any rules; still we may safely say that in the great majority of cases after early infancy, when the normal child sleeps most of the time, at least twelve out of the twenty-four hours should be spent in sleep. Until six years of age the daily nap should be added to this. The twelve hours of sleep should continue until the tenth year, and longer if the child is delicate or of especially sensitive nervous organization. From ten to fourteen years, ten hours of sleep are usually required and often twelve would be advantageous; from fourteen until full maturity the sleeping hours are, as a rule, more irregular than at any other period of life, and then the effort must be made to compensate for the short hours by longer indulgence when opportunity offers, remembering that few have the endurance to cope with the complexities of modern life and thrive on less sleep than a daily average of eight hours."

"Ma! ma!" Willie sobbed. "Do my ears belong to my neck or my face?" "Why, what is the matter?" was the temporizing reply. "Well, you told Mary to wash my face, and she's washing my ears, too!"—Montreal Herald.

An American who desired to go to Mexico as a soldier was rejected on account of his poor teeth.

"What's the idea?" he said to the recruiting officer. "Have we got to eat the greasers after we kill 'em?"

Charley Sharp says: "Loyalty is the greatest word in the English language. To be successful you must be loyal. When a man is kicking and knocking, he is not loyal. A mule never kicks when he is pulling."

DRINK "QUALITY" TEA AND COFFEE
From IMPORTER to CONSUMER direct by PARCEL POST
"CHA-MA" - - - - 60 CENTS A LB.
A FAIR GREEN UNCOLORED JAPAN TEA
"RIGGAR BLEND" - 50 CENTS A LB.
A DELICIOUS BLACK ENGLISH BREAKFAST TEA
"SEE-LOS BLEND" - 75 CENTS A LB.
OF THE CHOICEST BLACK TEAS IN THE WORLD
PACKED ONLY IN 1-LB. ABSOLUTELY AIR-TIGHT TINS
"E-CIL-A BLEND" 1 LB. 40 C; 3 LB. $1.00
A CHOICE BLEND OF PURE COFFEE
PACKED IN AIR-TIGHT PACKAGES
ALL POSTAGE PAID BY US. MAIL ORDERS TO
THE WM. J SCHROTH CO.
112 A MARKET STREET SAN FRANCISCO, CAL.

TEACHING PAYS
Teachers Receive From $70 to $150 Per Month and Have a Pleasant Occupation - Free Catalog
PREPARE AT
WESTERN NORMAL
STOCKTON, CAL.

Our Young Folks

The Sawing Match.

In one corner of the old academy playground a group had gathered about two boys, Sandy Jardine and Max Guerney. Sandy was a tall, strong, large-featured chap, as opposite as the poles to the little, lithe, dark youth who stood near him, looking up in his face with laughing black eyes.

They were leaders, these two, each of his particular clan; and respecting their popularity the school was nearly equally divided. A strong rivalry existed between them, good-natured enough, for the most part, though sometimes verging toward unfriendliness. Just now Sandy was evidently excited, almost angry. In a foot-race the preceding Saturday Max had beaten him, gaining a supremacy which he possibly might hold.

"Yes, you did whip me, fast enough," Sandy was saying, while a dull red mounted to his cheek. "But, all the same, I'll whip you to pay for it, and any day you've a mind to set."

"The track was too short," cried one of Sandy's champions. "That's what's the matter. By the time Sandy got under headway, he had to turn. The walk was laid out for little fellows."

Considerable laughter followed this sally; and the "little fellow," Max, joined in it heartily.

"Come, I'll match you in any way you like!" continued Sandy. "Come, now—rowing, riding, running, wrestling—which shall it be? Come! I dare you, Max Guerney!" A little murmur of approval ran around the group, and the boys waited for Max's reply. Well they knew he would never refuse a dare. "I, as the challenged party, have a right to choose the weapons?" interrogated Max, with a side glance from his laughing black eyes. "Well, then, I'll neither ride nor row nor run nor wrestle. But I'll saw wood with you, Sandy; and you may beat me, if you can.

"I'll tell you." Max's voice rose clear above the tumult. "I'm in earnest enough. There's old Uncle Nathan Blines and his wife, poorer than double distilled poverty; and nobody to do a hand's turn for 'em since 'Siah died. I saw Uncle Nathan out chewing at his woodpile. You know they hauled him some cord-wood last winter—your father, Sandy, and mine. There's pretty near five cords of wood, I guess; and we'll have somebody divide and measure it for us. Then we'll saw to win; and, if you whip me in it, Sandy, the next Saturday I'll match you in splitting and housing it for him. What do you say?"

Sandy joined in the cheers and laughter with the utmost good nature.

"Done!" nodded he. "I'll do it."

Up spoke a slim, wiry little fellow at his elbow. "You shan't do the whole of it. Say, Charlie Bugbee, I'll split for Sandy, and you for Max."

"Agreed!" said Charlie.

"And we'll wheel in for you two, Art Humphrey and I," declared Sandy's brother Jack. "Won't we, Art?"

"Whew! What a fine thing we are going to make out of it!" laughed Max. "I'll tell you, boys, we might have the match in Uncle Nathan's back yard. Charge fifteen cents or so admission and give Uncle Nathan the money."

"Hooray!" shouted Reub Story. "My brother Bob works in the Clarendon Star office, and I'll get him to print our handbills. He owes me ten cents, anyway."

"Good for you, Reub!" cried Max. "'Grand sawing match! Ditto splitting! Ditto wheeling! Fifteen cents admission. Children full price. Gate open from 10 a.m. to 5 p.m.'"

Next day the prospective sawing match was noised about the town, and a day or two later the hand-bills were out. It made a great deal of talk, both sportive and serious, in the little village.

"It's a good idee—a fust-rate idee!" That was Captain Winty Coolidge, you might know. "It larns the boys that mixin' kindness to other folks with their fun don't hurt nothin'. It's wuth a quarter, and I'm a-goin' to pay it."

There was every indication that the sawing match would be a success financially.

"I don't believe the back yard will hold 'em all," laughed Max to the half-dozen boys who with him were taking their homeward way after school Friday night. "Have you got the tickets, Reub?"

"Yes, a hundred and fifty of 'em."

"Good! Now all we want is a fair day."

Hazy clouds veiled the burning face of the sun, and there was a cool breeze blowing. The sawing was to begin at nine o'clock, and before that time the board benches ranged along the back-yard fence were filled with merry lookers-on.

At precisely the same instant the first two logs across the saw-horses fell in twain.

How everybody cheered, sending little tingles of excitement thrilling along every boyish nerve!

The hours wore on. The crowd came and went, surging in and out of the back yard with jolly chat and laughter. The saws shrieked, the axes flashed in air, the wheelbarrows trundled from woodpile to woodshed. Peleg, who had been engaged to make music for the occasion, fiddled through and through his repertory of tunes, from "Yankee Doodle" to "Money Musk"; and at length came high noon, with twenty minutes for refreshments.

In the afternoon the excitement waxed stronger. The boys sawed steadily on.

Everybody was laughing and talking of the sport. Even Mrs. Colonel Grosvenor, the great lady of the village, drove up to the back-yard gate in her carriage, bringing a demijohn of delicious iced lemonade for the young sawyers and their friends. Captain Winty Coolidge walked around, rubbing his pudgy hands together, and sprinkling in encouraging remarks between the shrieks of the saws and the squeaks of the fiddle.

"It's a good thing to strengthen the muscles—the muscles. A long chalk sensibler than walking ten hours to the stretch—so 'tis, so 'tis! Good boys! Doing well, all on ye!"

How earnest every one became, to be sure, when the sticks in each woodpile might be counted!

"You never saw anything like it," said Max to his mother, between huge mouthfuls of bread and jam at the tea table that night. "Everybody who had a handkerchief shook it, I know; and Aunt Nabby waved her big checked apron. They were all singing out, 'Go it!' and 'Good!' till a fellow couldn't hear himself think. Uncle Nathan sat in the door, trotting his foot and wiping his eyes; though what for I can't imagine. Oh, 'twas great! And, when we counted up the money, there were $29.60 clean cash for Uncle Nathan.

"Oh, yes'm, Sandy beat by twenty-four seconds; and Sandy's cap'n again at the school. And, of course, Dickey Bird beat Charlie, because Charlie couldn't split my last stick till I sawed it; for they kept right on our heels the whole time. But Art Humphrey beat Jack Jardine. For Art caught up the wood in his arms, quick as Charlie split it, and ran into the shed with it and out, while Jack was unloading his wheelbarrow. It gives a fellow an appetite," concluded Max, with a sidelong glance from his laughing eyes, as he reached for his third helping of jam. "But it's a little hard on the arms."—Boston Traveler.

"Mary," said the sick man to his wife, after the doctor had pronounced it a case of smallpox, "if any of my creditors call, tell them I am in a condition to give them something!"

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THE MARKETS.

San Francisco, Aug. 26, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

No change has taken place in the local market for the last week, spot trading being light, though a good deal is coming down from the north. Some wheat is now moving for export, and Eastern markets are firmer.

California Club, ctl....	$1.62½@1.65
Forty-fold	1.60 @1.65
Northern Club	1.62½@1.65
Northern Bluestem	1.65 @1.75
Northern Red	1.57½@1.65

BARLEY.

Some export shipments have gone out, and it is expected that the movement will be in full swing in a week or two. There is consequently a slightly firmer feeling, and $1 per ctl. is about the inside price here for feed.

Brewing and Shipping.	Nominal
Choice Feed, per ctl...	$1.00 @1.02½
Common Feed	Nominal

OATS.

Offerings of white oats are still limited, and the price has again been marked up, though there is no heavy buying movement. Red oats are moving only in a limited way, at the old prices.

Red Feed	$1.10 @1.15
Seed	1.17½@1.25
Gray	Nominal
White	1.40 @1.45
Black Seed	Nominal

CORN.

The corn market here shows little feature, most arrivals being on contracts direct to millers, with little trading in this market. Importations of foreign corn are not giving satisfaction.

California Yellow	Nominal
Eastern Yellow	$1.90 @1.95
Eastern White	Nominal
Egyptian	Nominal
Milo Maize	Nominal

RYE.

There is no large movement, but some business of a small nature is going through at the former prices.

Rye, per ctl.....	$1.40 @1.50

BEANS.

The bean market continues to show frequent sharp fluctuations, and it appears that values are not very definitely established, the outlook being uncertain. There is apparently some effort to get prices down to a new-crop basis, though spot stock of nearly all varieties is hard to get in any quantity, and the tendency this week has been upward. There are no California bayos on the market at present and Mexican stock is higher. Mexican reds are likewise cleaned up. Practically everything except black-eye and cranberry beans has been marked up. The harvest is well under way in some sections, but nothing has arrived here yet. New limas are offered for September-October shipment East at $5.90, with further advances for later shipment. A good deal of contracting has been done around Oxnard at $5.50.

(On wharf.)

Bayos: Cal., per ctl....	Nominal
Mexican	3.50 @5.00
Blackeyes	3.50 @4.50
Cranberry Beans	4.25 @4.50
Horse Beans	2.00 @2.50
Small Whites	5.25 @5.75
Large White	4.50 @5.00
Limas	7.50
Pea	5.25 @5.50
Pink	4.50 @4.75
Red Kidneys	Nominal
Mexican Red	Nominal

SEEDS.

The seed business shows little feature at present, as there is no special demand from the country. Imported varieties are unsettled, with an upward tendency.

Alfalfa	Nominal
Brown Mustard, per lb....	3¾c
Canary	Nominal
Hemp	2¾@ 3¼c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

There is no change in local values, and while considerable business has been done, there appears to be a rather light demand just now at some important milling centers. Considerable northern stock, however, is coming here, and a movement is reported to the Atlantic coast, as well as to the Orient.

Cal. Family Extras....	$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

May conditions show little change, aside from a slight increase in local receipts. Medium and poor grades still form the majority of the offerings, and there is very little demand from dealers or consumers. Shipments on consignment continue heavy, and are commonly forced out at concessions. Third cutting alfalfa from the river district shows good quality, and finds a fair demand, but large offerings of cheap stock prevent any quotable improvement in prices.

No. 1 Wheat, or Wheat and Oats	$ 8.50@ 9.50
do No. 2	6.00@ 8.00
Barley	6.00@ 8.00
Tame Oats	7.00@11.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.50
Stock Hay	4.50@ 5.00
Straw, per bale.....	40@ 45c

FEEDSTUFFS.

The only quotable change this week is a sharp advance in bran, owing to limited production and small arrivals in the local market. Other lines in general are rather firm in price, but the movement is not heavy.

Alfalfa-Molasses Meal, per ton	$18.00@19.00
Alfalfa Meal, per ton....	13.50@14.00
Bran, per ton	27.00@28.00
Oilcake Meal	33.00@35.00
Cocoanut Cake or Meal..	26.00@27.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	22.00@22.50
Rolled Oats	28.00@29.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

The only special feature aside from minor fluctuations is the heavy supply of tomatoes from the river district, supplies of which have been piling up, with considerable stock carried over from day to day. This has brought ordinary offerings down as low as 25c, though fancy stock from around the bay finds a fairly good market up to 75c. Shipments are now coming in from Santa Clara county. Green peas and string beans are a little higher, while limas have declined. Cucumbers are still in large supply, though a little firmer than last week. Green corn is lower, though some fancy lots still bring $1.25. Summer and cream squash, okra and celery are all somewhat lower.

Green Peppers, lugs.....	25@ 35c
Carrots, per sack.....	35@ 50c
Grene Peas, lb.....	3@ 4c
Tomatoes: Delta, lugs...	25@ 75c
Beans: Wax, per lb.....	1@ 3c
String	1@ 3c
Lima	2@ 3½c
Cucumbers, lugs	15@ 30c
Eggplant, lugs	35@ 50c
Green Corn, sack	75c@ 1.00
Summer Squash, box....	20@ 25c
Cream Squash, box.....	30@ 40c
Okra, box	35@ 40c
Celery, doz.	30@ 35c

POTATOES AND ONIONS.

Garlic remains quite firm, but potatoes and onions are decidedly weak, with accumulating supplies and very little outside business. There are few offerings of Delta potatoes that will bring over $1, while onions are unusually low. Sweet potatoes are in ample supply for current needs, and have been marked down a little.

Potatoes:	
River Burbanks	80c@$1.05
Sweet Potatoes, ctl.....	1.65@ 1.75
Onions: New Yellow, sack	40@ 65c
Garlic, Cal., per lb.....	10@ 15c
do Oregon	15c

Dairy Produce.

POULTRY.

Some Eastern stock was held over from last week, but new arrivals are moderate, with rather light supplies of local stock. The market is accordingly in a little better shape, large and extra hens showing a slight advance. ably easier than it has been, though prices are not quotably lower.

Large Broilers	19 @20 c
Small Broilers, per lb...	19 @20 c
Fryers, per lb.....	19 @20 c
Hens, extra, per lb.....	17 @18 c
Hens, large, per lb.....	18 c
Small Hens, per lb.....	15 @16 c
Young Roosters, per lb..	20 @21 c
Squabs, per doz.	1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00

BUTTER.

The market shows little new feature this week, all surplus over local needs being readily absorbed by the northern shipping trade. Prices most of the week have been ½c under the figure of a week ago, but extras have now been marked up a little.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	29	29	29	29	—	30
Prime Firsts ..	27	27	27	27	—	27
Firsts ...	24	25	25	25	—	25

EGGS.

A large shipment of Chinese eggs came in this week, and this stock finds considerable demand at 18 to 20c. Fresh local supplies are scant, but the upward movement has been checked for the moment, extras showing a ½c decline, while other grades are unchanged.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	35	34	33½	34½	—	34½
Firsts	30	30	30	30	—	30
Selected Pullets...	27½	27½	27½	27½	—	27½

CHEESE.

Flats and Y A.'s are in fair supply, with trading on about the average scale and prices unchanged. Monterey cheese has declined from the advance of last week.

Fancy California Flats, per lb...	14 c
New Young Americas, fancy....	15 c
Monterey Cheese	13½@14½c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras	28	28	28	28	28	—
Eggs	34	34	34	34	34	—
Cal. Cheese:						
Flats ...	13¼	13¼	13¼	13¼	13¼	—

Deciduous Fruit.

For the fruit market in general there is a rather easy feeling as to prices, as nearly everything is in abundant supply and the local demand is running rather light. Few quotable changes have been made this week, however, most lines bringing about the same as before. Apples remain weak, with some shipping business, but not as much as usual, and large arrivals. Quinces are slightly lower. Cantaloupes remain very cheap, with good sized sales, but excessive offerings, and the market has been fairly flooded with watermelons. Most varieties of grapes are also quoted at lower figures, as shipments are getting well under way and supplies are abundant. Some choice lots of peaches in small packages are bringing better prices, but ordinary lots clean up slowly at the old basis. Pears and nectarines are doing a little better, and black figs have recovered a little from the low prices of last week. Blackberries show an advance, while huckleberries tend downward.

Huckleberries, lb.	7@ 10c
Blackberries, chest	$ 1.50@ 3.50
Strawberries, chest	1.50@ 3.00
Apples, New Crop:	
Belleflowers	75@ 90c
Alexanders	50@ 75c
Gravenstein	50@ 75c
Crabapples	30@ 85c
Quinces, box	50@ 75c
Nectarines, crate	75c@ 1.00
Pears, box, large.....	1.00@ 1.25
do No. 2	50@ 75c
Peaches, crate	25@ 85c
do lugs	40@ 60c
Plums, crate	40@ 80c
do lugs	75c@ 1.25
Prunes, lugs	75c@ 1.25
Figs: Black, double layer.	65@ 85c
White, single layer.....	40@ 65c
Cantaloupes, crate	30@ 65c
Watermelons, doz.....	75c@ 1.50
Casabas, lugs	50@ 75c
Grapes: Malagas, crate..	45@ 60c
Tokays, crate	50@ 75c
Seedless, crate	40@ 60c
Muscat, crate	40@ 60c
Black	25@ 50c
do lugs	40@ 80c

Dried Fruits.

The local dried fruit market is unchanged as to prices, and general conditions are about as formerly described in most lines. Owing to the uncertainty of the outlook and the impossibility of moving anything for export at present, buyers hesitate to take hold of the stock if any better prices are to be realized. At that, it is something of a gamble. The Eastern market has shown some easiness, but is a little steadier at present. Apricots have completely lost their former strength, however, as the pack is estimated at about twice that of last year, while the usual export outlet is probably closed for some time. Fig packing is now under way, and the expected advance in prices has not materialized. Prunes, after a period of easiness, are somewhat firmer, but without quotable advance. The crop is not turning out up to some of the early estimates. Peaches receive little attention. The raisin market is attracting more attention owing to the opening prices on seedless varieties by the Associated Company at an advance over last year. Business is coming out well at the new figures. The New York Journal of Commerce says: "A number of the local jobbers placed orders promptly for stock to cover probable requirements of seedless raisins, and bought rather more than the usual quantity owing to the scarcity of similar imported goods and the uncertainty as to future supplies from European producing countries. Others were disposed to hold back orders for a while. The coast market for prunes is stronger. There are said to be no offerings of straight 40s on less than a 6c four-size f.o.b. coast basis. It might be possible still to buy assortments covering 40s and 60s in equal quantities on a 5¼c basis, but the general quotation is 5½c and some packers are holding for 5¾c f.o.b. four-size bulk basis. Spot prunes are in light supply, especially in the more popular sizes, and with demand above the average for the season, the market has a decidedly strong tone, through prices ex store New York show no quotable improvement. There is a better tone in the coast market for peaches indicated by advices by mail and wire, but the trade here seems to be manifesting little interest in the situation. Apricots remain dull and easy.

Evap. Apples, 1914	5 @ 6 c
Apricots, 1914	8½@ 9 c
Figs: White, 1914.....	3c
Black	2 @ 2½c
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	5 @ 6 c
Peaches, new	3 @ 3½c
Pears	8 @ 9 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@ 4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

Everything considered, the prices being realized for Valencias in the Eastern marts may be considered as satisfactory. In coming to this conclusion, the heavy crop of local summer fruits, the volume of the Valencia crop itself, and the general money stringency throughout the country should be taken into account, when it would seem that the growers have small cause for complaint under existing circumstances. On the 24th, 22 cars of Valencias were auctioned in New York for an average of $1.65 to $3.60 per box. In other auction centers prices seem to have ruled slightly lower.

The cleaning up of foreign lemons keeps the demand for the California article brisk and prices are well maintained and are expected to remain so until the resumption of ocean trans-

portation and the new crop of foreign lemons begins to arrive freely. In the citrus belt pickings have, however, been light, but the crop is coming on nicely and pickings are expected to increase rapidly.

In San Francisco, Mexican limes show a narrower range, but otherwise values stand the same as last week. The interruption of shipments of Italian lemons has caused considerable excitement in the Eastern market, with a sharp advance in California prices, but it is reported that shipments are now coming in, and prices may ease off a little. The local movement is limited, oranges finding little demand in competition with deciduous fruits.

Oranges: Valencias, box	$ 1.75@ 2.50
Med. Sweets, box	1.00@ 1.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.00@ 2.50
Lemons, box	$6.50@ 9.00
Limes, case	4.25@ 4.50

Nuts, Honey, Hops, Etc.

NUTS.

The first shipment of new almonds has gone forward from Chico. The crop is said to be about 50% larger than last year, but the market is strong, owing to the difficulty of getting imported stock. Packers, however, have put their Eastern prices up to figures which are not receiving much response from the trade. Association prices have not yet appeared.

Almonds, 1914 crop:	
Nonpareils	18¼c
IXL	17¼c
Ne Plus Ultra	16¼c
Drakes	14¼c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

While fancy comb honey is very firmly held, on account of a closely limited supply, other grades show little strength. The crop is short, but the usual export market for surplus supplies has been cut off, and it is very hard to effect sales. Quite a lot of honey has been sent here on consignment, but is held at higher prices than can be obtained.

Comb: White	13 @16 c
Amber	10 @12 c
Dark	8c
Extracted: White	7 @ 9 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

BEESWAX.

There has been a fair movement of late, but the Eastern demand has now been pretty well taken care of, partly by Manchurian stock, and business just now is slow.

Light	31 @32½c
Dark	27½@30 c

HOPS.

The harvest is progressing well, and some sales have been closed, but this movement has not yet developed much activity. The market is very unsettled, with great uncertainty as to European requirements and opportunities for shipment, and neither growers nor buyers are very anxious to rush the movement. Some advance has been made in prices for both new and old stock.

1913 crop	14 @16 c
1914 crop	15 @16 c

Live Stock.

The market in general remains firm for nearly all descriptions of stock. Eastern markets have attracted considerable stock from California, as well as Nevada, and some large lots of lambs have lately been shipped from that State to Chicago. There is also quite a large movement of feeders to this State from Arizona.

Steers: No. 1	6¾@ 7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	6 @6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 5 c
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8½@ 9 c
150 to 250 lbs	9¾@10 c
100 to 150 lbs	9¾@10 c
Prime Wethers	5½@ 5¾c
Ewes	5 @ 5¼c
Milk Lambs	6½@ 6¾c

DRESSED MEATS.

Steers	10 @11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	10½@11½c
Ewes	10 @10½c
Suckling Lambs	11½@12½c
Dressed Hogs	15 c

WOOL.

While the fall clip is pretty well advanced in several districts, business has shown little life so far. Under present conditions it is very difficult to size up the future; prices are uncertain, and buyers hesitate to get into the field.

Fall clip:	
San Joaquin	7@ 9c

HIDES.

The quotations have been advanced again about ½c in most lines. Supplies are kept very closely cleaned up, and while the movement is not very large, it is unlikely that there will be any accumulation.

Heavy Steers, over 56 lbs.	15 c
Medium	15 c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb.	15 c
Light Cows, 30 to 50 lb.	15 c
Kip	16 c
Veal	18 c
Calf	18 c
Dry—	
Dry Hides	25½@26 c
Dry Kip, 10 to 15	26 @27 c
Dry Veal, 5 to 10	28 @30 c
Dry Calf, 7 down	29 c
Horse Hides—	
Salt: Large	$3.00
Medium	2.50
Small	1.00

HORSES.

More horses have been offered in San Francisco this week than for some time past, and while the market has not developed any real vigor, the current offerings are moved without great difficulty at fair prices. There apparently is a little more interest in heavy stock than there has been during the midsummer season, and it is expected that the demand will pick up within the next month or two.

Heavy drafters, 1700 lbs. and over	$225@275
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

SPECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

There has been a sharp demand in the Middle West markets in the past week or ten days for peaches, due to the fact that it is between seasons and there have been very few peaches from other States arriving in the East up until the last few days. Unfortunately, California Salways were not ripening rapidly and shipments have been held back. Now that they are ready to move in heavy supply, the Eastern peaches are also arriving in the markets and the trade is now trying to cancel orders.

There is little or practically no demand for cannery stock since the beginning of the European war and canners will undoubtedly take advantage of the clause permitting them to pay for the fruit within three to six months after delivery of the same.

There has been considerable complaint from Eastern buyers regarding the quality of late pears from several districts. It seems that a great many cars have been arriving with the fruit showing decay due to the ripening of the pears from the core out.

Malaga sales in Eastern markets have been disastrously low, due, in a great measure to the oversupply. There has been little or no regulation by the shippers regarding the quantity of their shipments, and it seemed to be their one desire to get as much of the crop off as possible before the Tokays came in.

Tokays are now moving from all districts and the quality appears to be, so far, equal to that of last season. Great care is being taken to eliminate as much as possible of the mildewed stock. The fruit seems to be fairly well sugared and is of good color and size.

There is considerable speculation among the handlers of Emperors as to the quantity of Almeria grapes that will be shipped to this country this season. The latest developments in this regard are that Russia, Germany and England, large users af Spanish Malagas, have notified the Spanish importers that they will not be in the market this season. Consequently, if arrangements are made to transport these grapes to America, it is not unlikely that the importation will be considerably heavier than expected two weeks ago.

The markets during the past week ranged as follows:

New York—Bartletts, $1.57 to $2; B. Hardy, $1.33 to $1.53; G. Duke, $1.20 to $1.50; Giants, $1.08 to $1.15; Elbertas, 63c. to 80c.; Gross, $1.30 to $1.70; Diamonds, $1.15; Thompson Seedless, $1.12 to $1.20; Malagas, 88c to $1.25.

Chicago—Bartletts, $1 to $1.70; B. Hardy, $1.15 to $1.35; G. Duke, $1.40 to $1.70; Giant, $1.45 to $1.50; Elbertas, 50c to 60c; Kelsey, $1.20 to $1.35; Crawford, 58c; Thompson Seedless, $1.25 to $1.30; Malagas, 65c to $1.25.

Minneapolis — Bartletts, $1.50 to $2.15; G. Duke, $1.30 to $1.90; Giants, $1.35 to $1.55; Elbertas, 75c to 90c; Kelsey, 95c to $1.45; Germans 95c to $1; Crawfords, 40c to 90c; Malagas, $1.30 to $1.40.

Boston—Bartletts, $1.10 to $2.50; G. Duke, $1.25 to $1.55; Elbertas, 50c to $1.20; Kelseys, $1.40 to $1.45; Gross, 70c to $1.70; Crawford, 50c to $1.25; Thompson Seedless, 75c to $1.35; Malagas, 75c to $1.30.

Philadelphia — Bartletts, $1.10 to $1.25; G. Duke, $1.20 to $1.30; Giant, 40c to $1; Malagas, 75c to $1.20. The number of cars of deciduous fruits shipped to Aug. 25th, totals 8038½ as against 7172¼ up to the same date last year.

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AND ALL OTHER KINDS
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USEFUL HINTS.

A quick way to clean currants when making cakes is to put the fruit into a colander with a sprinkling of flour, and rub round a few times with your hand. It is surprising how quickly the stalks are separated and come through the small holes.

Mildew stains are sometimes a source of great trouble, and are difficult to remove unless you know just the right way. Rub a little soap over the mildew spots, and on top of this a little chalk and lemon juice. If the garment is then put out in the sun for a couple of hours and afterwards washed in the usual way, the spots will disappear.

Vinegar placed in a bottle of dried-up glue will moisten and make it liquid again.

When making a steamed pudding put a piece of well greased paper over the top before tying on the cloth. This will prevent the cloths from becoming greasy, and they are no trouble to wash.

If you wish to prevent green vegetables from boiling over, drop a piece of dripping the size of a walnut into the center of them, just as they commence to boil.

The nervous housewife who lives in constant dread of fire may, with very little trouble, make an extinguisher that will put out a blaze if used at once. All she needs to do is to put three pounds of salt in a gallon of water, and to this add a pound and a half of sal ammoniac. This liquid should be bottled, and when the fire is discovered it should be poured on it.

A stalwart young German applied for a position on a farm. As he walked into the barn he addressed the farmer:

"Hey, mister, will you job me?"

"Will I what?"

"Will you job me? Make me work yet."

"Oh, I see; you want a job," said the farmer. "Well, how much do you want a month?"

"I tell you. If you eat me on der farm I come for fife dollars, but for twenty-fife dollars I eat myself at Schmidt's."

Indignant Politician: "Why didn't you print all of my speech?"

Country Editor: "Well, to tell the truth, sir, we ran clean out of capital 'I's.'"

PUBLISHER'S DEPARTMENT.

Again this week our subscription department reports a big gain in new subscribers. The exact number being 248, all of whom were secured without the use of premiums and at the full subscription price.

Our new book of "One Thousand Questions Answered" by Prof. E. J. Wickson is still going out in large numbers. Every subscriber should have a copy. Send for our special subscription offer.

Next week the publication office of the PACIFIC RURAL PRESS will be moved to 525 Market street, third floor, in the Underwood building. If you have been in the habit of coming to see us at 420 Market street, we wish you would kindly make a note of the change and call on us in our new quarters. If you haven't the habit of dropping into our office—get it.

Next week we will issue a special Fair number of 32 pages. Lots of fine articles and attractive cuts. Look for it.

A letter from Rowland Taylor, a subscriber, of Wellington, South Africa, says: "Say! 'California Fruits' is making the industry here. Without it we would have been very many years behind hand in progressive methods." He refers to "California Fruits and How to Grow Them," by Prof. E. J. Wickson. Price, $3.00 postpaid.

How Electricity Saves the Farmer Money

This twenty-horse-power electric motor, photographed on the Melone Co.'s Ranch, Napa, California, not only pumps water to irrigate forty acres of alfalfa but, between times, runs an ensilage cutter, a rock crusher and a barley crusher. Being bolted to a wagon, it is easily moved from place to place.

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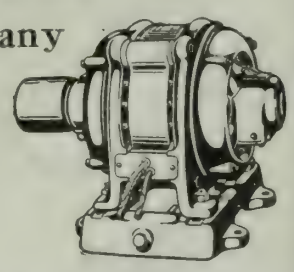

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THE
PACIFIC RURAL PRESS

SAN FRANCISCO. SATURDAY, SEPTEMBER 5, 1914. LOS ANGELES.

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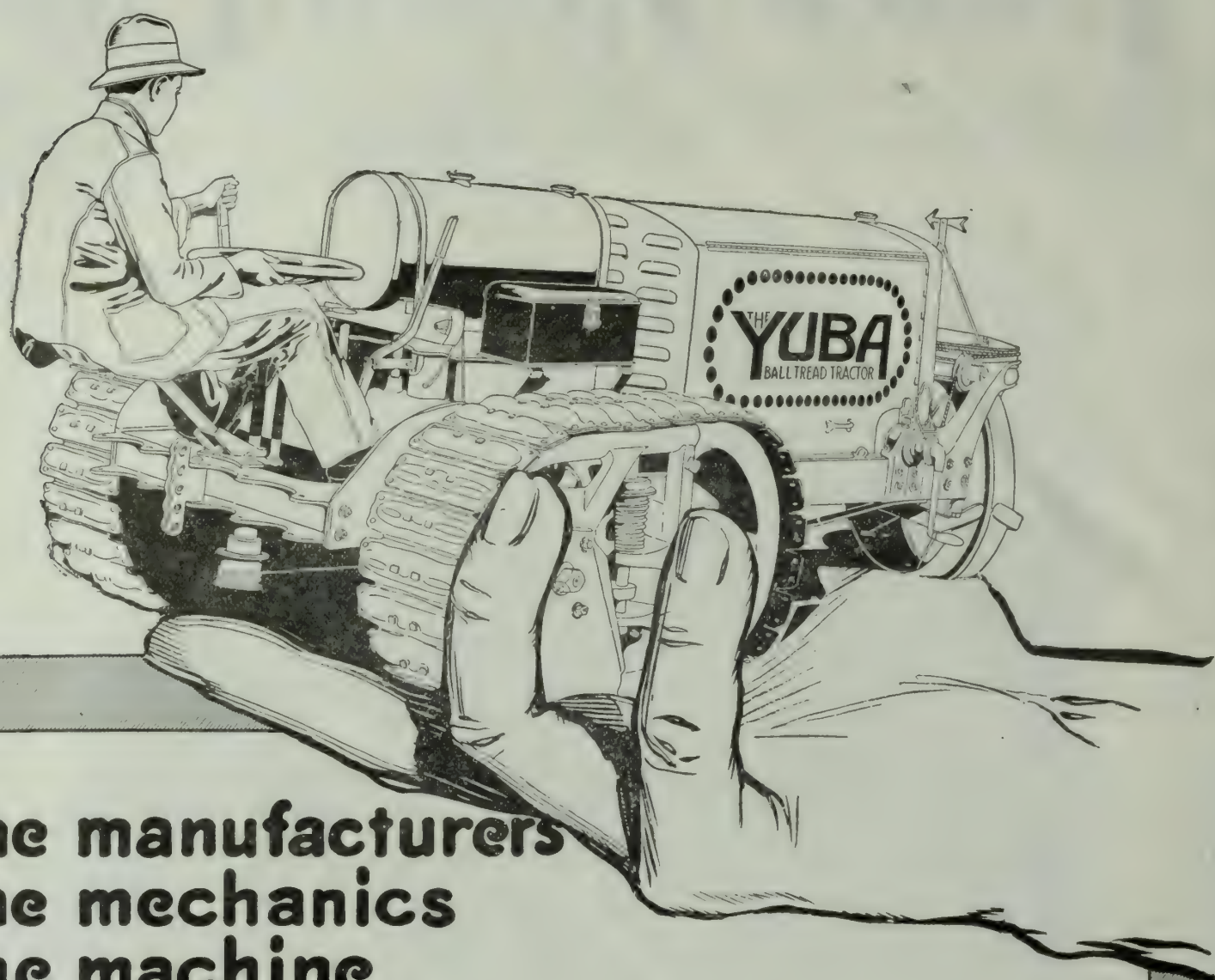
Delights of Autumn Life in an Interior California Valley under the grateful shade of the Umbrella Trees.



the manufacturers
the mechanics
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As for the machine—there is a booklet describing it.

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433 California Street, San Francisco

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THE PACIFIC RURAL PRESS

Vol. LXXXVIII. No. 10. SAN FRANCISCO, SATURDAY, SEPTEMBER 5, 1914. Forty-Fourth Year.

Why See the State Fair?

[Written for the PACIFIC RURAL PRESS.]

The State pays money to provide a State Fair to educate its visitors to know and practice the best in agriculture. This purpose is evidenced by rules for exhibitors, such as, "All animals in the livestock classes must, unless specifically excepted in the schedule, be pure bred, and if over six months of age, be registered"; "In all cases (in the breeding classes) satisfactory evidence must be furnished that the animal is a breeder"; "No stalls or pens will be assigned for stock which has not been inspected by the State Veterinarian and found to be free from transmissible blemishes and from infectious or contagious diseases. No diseased stock or poultry will be admitted to the grounds under any circumstances. No infected or wormy fruit or vegetables will be permitted"; "Exhibits in the horticultural, viticultural, and agricultural classes must be shown, unless otherwise specified, in containers or packages generally used in marketing each variety. . . . The fruit to be scored on basis of appearance, quality, and pack. All fruit must be correctly labeled to conform with the American Pomological standard."

The grand advantage of a State Fair is the opportunity for the visitor to compare different varieties and breeds with the best samples of each, right at hand, to be inspected.

The best and most representative exhibits of fruit and vegetables from the various sections of the State are there, and an attendant at each booth is glad to explain the merits of his breed or variety or section.

Eastern folks with an eye to the Golden West find at the State Fair a way of comparing sections in a preliminary way without paying the carfare which seems unusually expensive. Western folks, who are ever on the move, meet here the representatives of more promising sections and form ideas as to where they will locate next. Twenty-four counties had separate exhibits in Agricultural Pavilion last year, appealing to a far more cosmopolitan throng than could their Chambers of Commerce, with all their boosting and expensive advertising. The following counties had entered, at the time of this writing, for the 1914 show: Colusa, Placer, Fresno, Butte, Santa Clara, Sacramento, Sutter, Calaveras, Alameda, San Diego, Imperial, San Bernardino and Madera.

But the State Fair touches other sides of farm life than production of foodstuffs or the advertising of communities. One of the 19 departments of the coming State Fair to be held at Sacramento Sept. 12 to 19 is labeled "Educational." Over $50 premiums are offered for samples of school children's work in 13 exhibts. Students of business colleges and technical schools have chances at half a dozen gold medals.

For the best judging of stock, poultry, and dairy products, California young men under 25 years have chances at University Farm scholarships and cash prizes amounting to $590 in six classes. For pigs grown by boys of high school agricultural clubs, $60 is offered in six prizes.

Another department, one of the three new ones this year, is that of Floriculture, in which $150 in 23 premiums are offered. These will draw exhibits that might inspire many a farmer's wife to take the lead in adding new beauties to her home.

The textile department offers over $80 for fibers and their primary products, including California grown cotton, flax, hemp, silk, wool, and ostrich goods.

Embroidery, sewing, and cooking are encouraged by $455 in 139 prizes. Surely one of these should go to every part of the State.

We are often asked as to the comparative merits of different makes of machinery. Here at the Fair will be full opportunity to compare them if you are interested in mining, stationary or portable or domestic machinery, tractors, pumps, waterwheels, and all farm and road-making machines. And samples of California's minerals will compete for $60 and 27 gold medals in 30 sections.

Quoting from the premium list announcement:

"The Livestock Department has been carefully revised . . . (with) the co-operation of the faculty of the University Farm at Davis. The schedules now conform to the leading stock shows in the United States.

"The Poultry Schedule has been rewritten, the premiums offered being more liberal, and the conditions changed to meet the requirements of the most modern standards.

"The Horticultural Schedule is practically new. After consultation with growers, packers, and shippers throughout the State, the list has been arranged on a modern basis and approximately 600 premiums will be awarded."

General View of State Fair Grounds

These are some of the efforts of the State Agricultural Society to provide an educational exhibit, the seeing of which will cost the visitor 50 cents a day. The suggestions received will be put into practice over the State next year, and thus will be justified the State's appropriations.

To have the State Fair at all, the exhibits must be secured from the producers of the best that agricultural California grows. But fitting stock and preparing other products for exhibition is so expensive that there must be returns to the exhibtors. These come in the shape of premiums, sales, and advertising. That such returns are worth the effort is evidenced by the following list of livestock exhibitors who had entered up to the second day before entries closed:

Shorthorn Cattle:
Pacheco Cattle Co., Hollister.
Hopland Stock Farm, Hopland.
T. B. Gibson, Woodland.
Thornton H. Glide & Son, Davis.
Howard Cattle Co., Newman.

Herefords:
Simon-Newman, Newman.

Red Polled:
R. R. Cartwright, Angels Camp.

Guernseys:
A. M. Humphries, Mayhews.
Elliot Brant Rancho, Owensmouth.
C. G. Lathrop Estate, Palo Alto,
Dr. J. Henderson, Berkeley.
Wm. H. Saylor, San Francisco.

Jerseys:
R. E. Watson, Modesto.
W. W. Fisk, Davis.
Jersey Queen Farm, San Jose.
Fred B. Wulff, Modesto.
J. M. Bomberger, Modesto.
Chas. N. Odell, Modesto.
D. F. Conant, Modesto.
C. D. Hayworth, Modesto.
W. J. O'Brien, Stockton.
Guy H. Miller, Modesto.
J. N. Crabb, Chico.
J. A. Goodall, Turlock.
C. P. Hemoree, Monmouth, Ore.
W. J. Hackett, Ceres.
N. H. Locke, Lockeford, Cal., 40 cattle.
J. G. Stahl, Merced.
D. T. Wieland, Thalheim.

(Continued on page 235.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

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Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. Wickson - - - - - - - Editor
Frank Honeywell - Publisher and Manager
W. H. Schrader - - Advertising Manager
D. L. Schrader - - Subscription Manager
R. E. Hodges
J. C. Loomis - - - - Assistant Editors

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 1, 1914.

Stations.	Rainfall Data			Temperature Data Past Week	
	Past Week	Seasonal to Date	Normal to Date	Max'm	Min'm
Eureka	.01	.02	.22	53	50o
Red Bluff	.00	T	.03	96	54
Sacramento	.00	.00	.01	86	52
San Fran	.00	.02	.01	64	52
San Jose	.00	.00	.04	76	54
Fresno	.00	T	.00	94	54
Independence	.00	.16	.00	88	54
San L. Obispo	.00	T	.05	74	54
Los Angeles	.00	.01	.00	76	56
San Diego	.00	.00	.00	70	60

T means trace
*Of this amount .10, not previously reported, fell on July 19-20.

The Week.

California is rising to her present duty splendidly and that seems to be to demonstrate that a community ought to be busy, contented and confident in the constructive, rather than in the destructive, work of the world. Our ports are open to the world's traffic; our skies show the old style of August meteors, not the bombs of war, our towns and country-side are full of the hum of little, wholesome business such as makes men and communities prosperous, and there is apprehension nowhere, except perhaps in some big business which has holes between wind and water. Our issue this week is largely given to facts about the State Fair and leading industries which will be represented on the grounds at Sacramento from September 12 to 19. The inducements to exhibitors are outlined on other pages; we have a different appeal to make in this place. We would emphasize the advantage of personal contact of Californians among themselves and of Californians with the hosts of intending investors and settlers which the fair will bring together. Our observation is that newcomers like California, but as a rule they love Californians. One learns to love California but one loves at first sight the joyful, optimistic and hospitable Californian. Therefore it is the duty of all Californians who can, to go to the State Fair this year; go up to it with as broad a smile as you can twist through the turn-style; let it expand afterward until it covers the whole acreage within the boundaries; let it reach illimitably upward until it becomes a part of the glorious September sunshine which floods the landscape. It is well enough to glorify the industries which the State Fair betokens, but a greater thing is the humanity about it, and it is that humanity, with its breadth of view and depth of heart, which is making California great and greatly to be desired of the whole earth. Therefore, dear Californian, take a clean shave like a god, or draw in your skirt like a goddess, and go to this year's State Fair for the joy of your fellow man.

Our New Offices.

This week our tripod is set up at a new elevation. During the 39 years which cover the writer's connection with this journal, the shears and paste-pot have shifted at least half a dozen times—each time occupying a better point of view, topographically and otherwise. Now we are established in the Underwood Building, 525 Market Street, a large, modern building, concreted, reinforced, hallways marbled, elevators sky-rocketted, and our spacious offices have winter sun guaranteed and summer sun rigidly befogged. It seems a fitting reward or recompense for some things of other kinds which we have endured. And we have risen considerably socially. Several subdivisions of the State government are domiciled with us and the door-inscriptions indicate that our neighbors are engaged in various activities for the good of man, and we hope to live in peace with them. One feature of our environment is the head office of our friend Desmond, himself the head of the greatest man-feeding outfit this side of battle-scarred Europe. Desmond had greatness thrust upon him. Upon him fell suddenly the edible part of the Relief Work for the homeless after the disaster of 1906 and he was literally baptized by fire into his new title of Commissary par excellence. Figuratively speaking he is still giving away meals, for he has learned to calculate to the second decimal of a cent the cost of feeding one man or a million men anywhere on the Pacific Coast. He will calculate it for you—if you have the cent: that is the only requisite. Reading so much war news and so many wise calculations that Europe was more likely to be starved to death than shot to death, it did not take us long to set up our tripod alongside of Desmond, and now, really, we believe we have one on the Kaiser. For though we believe Desmond has nothing in his head office so nutritious as our old paste pot, the very lettering on his door is sustaining. All of which indicates that we are making a new start in our old work in a very good place and ready to welcome all old or new friends who are interested in the advancement of California agriculture as a whole or in individual parts thereof.

Mr. Lubin's Latest.

As stated in our issue of July 25 we cannot see what is the use of cuffing David Lubin's latest projection for the establishment of an international commission to regulate ocean freight rates. Nearly every American professor and European potentate cuffed the International Institute of Agriculture until the King of Italy established it and made it work and thus gave his kingdom a new angle in the world's eye. We honestly have the conviction that if David Lubin is given another decade to work in, he will bring the world nearer to universal peace than all the exhorters of this decade have done thus far. Some of them talk most convincingly on the economic sin of war and everybody agrees to it. Lubin does not talk so much, but he plans to get the nations to doing business with each other and not against each other, and first thing you know the nations will be so mixed up in business that they cannot stop to fight. Lubin knows how business mixes up individuals and harmonizes them and he has a searching philosophy which convinces him that nations will act just as men do under the same conditions. We do not know how his scheme to regulate ocean freights will work or how long it will take to attain it, but what is the use of making just as big a mistake in that line as other men made in fighting the Inter-State Commerce Commission, the International Institute of Agriculture and various other things which have clearly come through as great factors for industry and humanity? We have an idea that if you will sweep all the broken shells and plucked feathers out of that misfit dove-cote at The Hague and clean up the place for the first meeting of Mr. Lubin's "International Commission for the Regulation of Ocean Freight Rates," it is just possible that you may bring it about that everyone in the world will have so much to eat that all the fight will go out of him. This is part of the plan, for the idea back of the proposed commission is that such an organization would steady the price of the world's staple products. Therefore, we say, do not knock another American idea and send it begging around Europe as the Institute idea did and triumphed to the honor of the King of Italy. Let the United States give instructions to Mr. Lubin to invite all governments interested in the International Institute to participate in a conference to consider the advisability of formulating a convention for the establishment of a permanent international commission on merchant marine and ocean freight rates. It is the psychological moment to do this, for the nations will soon be so tired of fighting that they will be glad to get together, but it will of course be too laughable to summon such a lot of pugilists to a peace conference.

Government Help.

We stated last week, not disrespectfully we hope, what we thought of a proposition that the government buy crops and gamble on them for the world's good or our own. That sort of thing has been tried and it never did anyone any good. In this country it has just gone by the board in the shape of an effort by the cotton states to induce the government to set a price on cotton and to take it at that price and issue fiat money to pay for it, if no one would pay more. The Secretary of the Treasury refused to consider the proposition, saying that it is a waste of time to talk about it, because enough national bank currency is authorized by present law to handle the cotton and all the other crops in the country. The Secretary proposed to accept as a basis for currency notes, secured by warehouse receipts, cotton, tobacco and naval stores at 75 per cent of their face value, and this was accepted by the cotton representatives who recommended that every effort be made to assist producers in holding their cotton for a price that will minimize their losses, until the channels of foreign trade are reopened. Eight cents a pound was suggested as a fair basis for loans on cotton. This seems rational enough as a scheme for advances on cotton by the Reserve

banks, which will, of course, look out for their security. What we do not find, however, is any suggestion that interest rates will be given which will help borrowers to get through. Produce properly warehoused and insured is good security, and money advanced, at a safe ratio to its value, ought to be had by borrowers at about government rates for money. To allow reserve bankers, or any other kind, to get as much or more for handling the money than the government gets for the use of it, is not a fair deal to the borrowers. We do not hear enough about that aspect of the matter. It is the fixing of low rates to borrowers that should adhere to the use of government money. It is counted an absolute essential in Europe.

The Foolish Purpose of It.

The world is settling down solidly to the important business of finding out where it is at. Among belligerent nations great danger has suppressed nonsense. In Germany the socialists have declared loyalty to a system of individual exaltation which they hate. In England the Irish ruction cloaks its shillalah and the militant suffragettes are as demure as their grandmothers were. Perhaps there is nothing better to bring humanity up to the bar of its own better sense than a good scare. The verdict will be rendered in the terms of the world's public opinion, and even the most presumptuous potentates know that, both for the immediate outcome of the war and the adjustments which will follow, their turbulence will gain or lose according to what the world thinks of it. Although the United States is not in the war and has already earned from the poets the tribute of majestic calmness, it is to be hoped that we will be able to borrow enough of the world's scare to knock out of us some of the nonsense in which we have been recently indulging. California ought to demonstrate her possession of true, majestic calmness and good judgment by knocking out a lot of the ready-made law along radical lines, embodied in the amendments to be voted upon in November. They embody economic foolishness which endangers our present attainment in industries and will arrest or retard our development. One foxy grandpa of our acquaintance tells us that he is "goin' agin every blamed amendment"—which is, of course, not a rational thing to do, but it will surely do less harm than to favor them all, on the ground that they are progressive, and therefore desirable. Take, for instance, the 8-hour day amendment. We seem to be just getting down to the motive in it. We have not seen the Los Angeles Citizen, but we have seen what we believe to be a quotation from it in which T. W. Williams, secretary of the Socialist Party of California, says this:

We cheerfully admit that a Universal Eight Hour Law will, to an extent, increase the cost of living. The Socialist Party, in putting forth the bill, did not claim that it would solve the economic problem. On the contrary, we most emphatically assert that so long as profits remain stable no single piece of legislation can bring to the workers any advantage without at the same time revealing the incompleteness of any program which does not strike at the roots of capitalism—which are profits. I want to break this information gently, Mr. Ranchman, that your ownership of the land is only temporary, anyway. We are not agitating an Eight-Hour Day because of its effect on your profits. We propose the abolition of all your profits. The sooner you learn this, the better.

Well, then, if the 8-hour law will wreck our farming, as so forcibly argued on another page of this issue by Mr. Bristol, then it will do exactly what the proponents of the amendment intended. All our tender-hearted readers who have favored this amendment because they desired to be merciful to their workmen may now see that they favored it under misapprehension—unless they understood and approved Mr. Williams' plan for abolishing all private ownership and individualism. If they honestly hold that as their economic and political creed, they have a legal right to do so and we are justified only in praying that their eyes may be opened. But we have a right to say, and do say, that to rob a man of his property, attained by his energy, self-denial and foresight, and really a product thereof, is an act for which the law provides prisons and penal labor, and the human race does not propose to change that law, which from its very infancy has made life worth living.

Queries and Replies.

Autumn Irrigation of Peaches.

To the Editor: Considering the abundant rainfall which we had in the San Joaquin Valley last winter, would you consider it necessary or advisable to irrigate peach trees to promote buds for the next year? I had only a fair crop on the trees this season, so that the draft on the vitality of the trees was light. They made a fine growth and are strong and vigorous. They are six years old.—GROWER, Merced.

We answered a similar question about prunes in Lake county last week. In this case the same general rule applies, but conditions are slightly different and in a general way it may be said that peaches in the San Joaquin are more apt to need autumn irrigation than prunes are in Lake county, because the rains are apt to come later and both soil and air to be drier in the San Joaquin. Still if the soil is fairly deep and retentive and is kept well cultivated to save moisture until the rains come, the peach will go through well without irrigation. Whether that fits your case must be told by the aspect of the trees and the condition of the subsoil; in this respect the same as given last week in the case at Lakeport. If the peach trees are still carrying good green leaves and the subsoil is moist, irrigation is not necessary, or at least need not be applied until later in the autumn, provided early rains should be late or scant. On the other hand, if the leaves are yellowing fast an irrigation should be given—not necessarily to save the leaves, perhaps, but to prevent shriveling of the new wood and injury to the roots by too great drying out of the soil. Experience teaches that too great drying out in the fall endangers the crop of next year.

Lifting Trees Planted too Deeply.

To the Editor: I have a mixed orchard that was set out last January. The trees were planted from eight inches to a foot too deep. I would like to plant these trees right this next season. Can this be done without serious damage and if so, the best time to do it?—S. M. K., Galt.

You can pull the trees upward several inches when the ground is well soaked with rain, say in December—if the soil is a light loam. If, however, they have grown well since planting we should work the soil away from the trees this winter and let them go. If they have suffered from such deep planting and have not made much growth, we should replant properly with vigorous new trees. It is hard to prescribe without seeing the patient.

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Producing Cannery Peaches

[Written for the PACIFIC RURAL PRESS.]

Some people send peaches to the cannery with good, bad, and indifferent all mixed. The cannery people sort them over, usually at no cost to the grower, and pay for the good ones. But when the fruit is coming in fast, whose gets canned first? Surely not that which must be sorted, but that which is delivered in practically faultless condition. The unsorted fruit waits till the rush is over, and by the time the factory employees get to it, much of the good fruit is spoiled or has ripened too much to can in the fancy grades. Possibly fruit raised by a man who would send it in such condition might not be fancy anyhow, but the apparent fact remains that more of the good fruit of the man who sorts on the ranch is actually canned than that brought to the canneries mixed with rots. The fruit sorted out at the ranch would make good hog feed too, while that returned from the cannery is often too far gone.

A prominent fruit canner in years gone by had to find out why so many bruised peaches were being canned. They could not be sold satisfactorily because they had oxidized at the bruised spots and turned brown and unattractive. He watched the fruit coming from the ranches to the factory and found one source of the trouble—there were no springs on the wagons. The bruises could not be detected then, but showed up badly before they were canned.

He wishes to call attention to the fact that the canners are willing to accept from the growers whatever they can dispose of. So the grower may well furnish fruit that can be sold. The demand for lowgrade fruit may be strong one year and nil the next. This year this company sold many low priced pears and does not have to cull the growers' offerings so closely.

On one ranch owned by a canning company itself, the fruit must not be "picked out loud." If you can hear the peaches drop on the bottom of the bucket, they are also likely to be dropped onto each other and the bruises will show up later. The grower may well remember that it is sometimes 48 hours after peaches are delivered at the car door till they are put into the can, especially if shipped 100 or 200 miles as many of them are.

This brings on another point. An irrigation six weeks before peaches are picked, will put them in better shape to carry on a rail trip to the cannery; but one cannery man maintains that an irrigation three weeks before picking makes a better quality for canning. They have more juice—"more life," as he says—and while they require specially careful handling, the extra weight pays the grower "four times over" for the extra trouble.

Spring irrigation while the pits are forming up to June 1 has a tendency to force growth of the pits, making them undesirably large and often misshapen. Winter irrigation which fills the soil with water and keeps it so during the spring, acts the same way. Fall irrigation is all right to help the vitality of the tree and the setting of fruit buds, but of course should be applied early, as it does not effect these results after the leaves fall.

Most growers pick three or four times, but some try to economize by picking all in two times. This tends to make them pick fruit both too green and too ripe, so that they lose in weight more than they gain in labor, even if the cannery accepts them, which often causes a loss to the cannery also.

The peach picker always sees the ripest side. The tendency is to pick too green. A good way to test one's self is to turn away from a box just picked and in a short time look at it again to see whatever green color may be exposed. There shouldn't be any. If there isn't, the peaches are probably O. K. even though rather hard. Of course the inside fruit which does not get the sun usually lacks color, but that is so late that there is but little danger of greenness if left till the last picking.

Sam Clough instructs his pickers to press lightly the upper edge of the peach toward the stem. If it does not give, it is too green; if it gives and does not spring back it is too ripe. Experience develops ability to tell whether it will do this, by the color. Pressure on the sides makes bruises.

Phillips should be a solid yellow from skin to stone, with no trace of greenness. Tuscans and Levis are similar to each other in that people pick them judging by the red color rather than by the yellow. The red may be underlaid by a straw or lemon yellow, in which case the peach is not ripe enough; it should be a deep golden yellow.

A great many of such uneducated pickers as we now have are totally unable to distinguish shades of color—they are semi-color-blind; they can't pick canning peaches properly and should be put at other work.

Varieties. — Orange clings once were a fine quality canning peach but as a variety have deteriorated. The discolored flesh is its least objectionable quality, for this nearly or quite disappears after the can is sealed, if not consumed within about three months. The Sunlit Fruit Co. is advising growers at Atwater, however, not to graft over or pull out their old orange clings, which fill in the season after the more common Tuscans and before the Phillips of that section.

A deep red color around the pit might discolor the syrup permanently, but a pink color at the pit as in the Lovells is desirable, because such do not turn brown when over ripe as the pure yellow varieties do.

A variety such as the Orange cling which oxidizes to a brown color quickly after peeling, is undesirable for canning. Varieties as Tuscan and Phillips with plenty of acid and juice, may stand hours after peeling without turning brown.

In former years when Salway pits were used for nursery seedlings, most of the new clings produced were late varieties. More recently since the Muir pits and those of other early varieties were used, new clings have been found which are

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more or less intermediate between Tuscans and Phillips. A good cling ripening at that season is much to be desired to take the place of freestones. These are now used just to fill in, and are more or less disappointing to the consumer who just orders "peaches" and doesn't know why the ones he gets are inferior to the clings for which the grocer would have to pay a higher price and probably make smaller profit. So, the canners are yearly decreasing the number of freestones used and increasing the clings, with the ultimate aim of using them exclusively. Meanwhile there is a call for new mid-season clings which have the canning requirements.

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Packing and Loading Table Grapes.

[Written for the PACIFIC RURAL PRESS.]

"Two pounds of grapes don't amount to much in a California vineyard; but when they are added to an ordinary crate, they make a tremendous difference on the Eastern market, selling such crates when others scarcely sell at any price," says J. S. Rhodes, who packs the crops of a number of Modesto fruit growers for the California Fruit Exchange.

"It costs about 75 cents to produce and sell a crate, and most of that is fixed charges whether we pack scant or full, so we had better pack the full crates that bring the most net returns.

"Every crate of No. 2 standard that I pack weighs 30 pounds net, the No. 1 standard are 28 pounds net. We put a ¾-inch cleat across the ends of every crate and then a ⅜-inch cleat on top of that and then bulge the tops in covering the grapes. They shake together so the crates are none too full when displayed for sale in the East.

"We want everything we ship to test 15 to 17 per cent. sugar. If there is any doubt about it we test some, and if not that sweet, back to the grower they go. (A prospective grower customer was in the office at that time.) The sort the birds eat are usually sweet enough. Thompsons ought to be clear of any green color.

"In picking Thompson Seedless, leaves and twigs should be laid in the bottom of the lug box, the bunch grasped in the left hand, cut without a jerk, and laid top end down. The stems and berries are brittle when bunches put in, so none of the reduces the strain on both, and if you don't rub them, the bloom stays on all right.

"They ought to be wilted in the wind a couple of days to toughen the stems so they can be bent around to fit the basket, and to toughen the stem connection of the berries so they won't shatter off. The better you handle grapes, the better price you will get.

"There is only a short time to market Thompsons profitably fresh, for when the Malagas ripen, people prefer them. It doesn't pay to dry grapes if you can net a cent a pound or over, but you can't get that for Thompsons if you are slow in marketing them."

"Malagas hang a long time on the vine and don't turn to raisins very easily. I don't pick mine till late September when they are thoroughly ripe and full of sugar. It makes more weight," says A. Thiele of Oleander, Fresno county. "Last year my grapes, shipped in September, brought 5 to 25 cents per crate more than the other grapes in the car (of other varieties). I got the better price on account of their ripeness. Anyhow, the Malagas on our heavier soil south of Fresno bloom and ripen a week later than those on the more gravelly soil north of town.

The Universal Thompson Seedless.

"I think it best to use the small boxes for picking. They hold about 35 pounds; we line the bottom with leaves, then cut the bunches from the vines, holding them by the stems and not touching the berries, and set them in the box in one layer standing them slopingly on the little end. They are wilted at least over night and the packers next day can begin taking first the last bunches put in, so none of the remaining ones are pulled or displaced, and the attractive bloom is left on.

Defects to Cut Out.—"The packers must clip out all sunburned and otherwise imperfect grapes. Some have many "water berries" which shrivel up soon. But those are scarce on my vines, and I think that the trouble is in the sort of vines you plant. Some folks have bunches that are 50 per cent. water grapes, and these ought to be left on the vines or fed to the hogs. They spoil the uniformity of the size of berries, and are soft and first to spoil. (A. Colombero of Clovis has several vines of water grapes among his 15 acres of Malagas and has simply grafted over a number of them.)

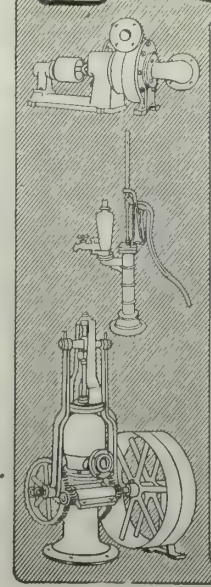
"Then there are small seedless berries, probably due to lack of pollenation. These must be clipped out, for they spoil the looks of a good bunch. I have very few sunburned berries, due to the heavy foliage which protected most of them, when some folks lost as many as 50 per cent. by sunburn those hot days last summer. I get the heavy foliage by heavy fertilization with stable manure. From my 30 head of stock I get enough to fertilize about 10 acres every year, and I buy about 50 tons from Fresno every year at $1.25 per ton delivered at the ranch. Vines and livestock and trees must have nourishment to reach highest productiveness. And this year I needed the extra heavy foliage.

"Mildewed grapes don't go, either, but I have a minimum of mildew, though these vines were sulfured only twice. I did it right both times; the last application being in June after the rains. You can't get enough on with bellows (Perhaps 'twas the wrong kind of bellows.) I irrigate the grapes only once, and that in springtime.

"One of my exceptional crops was 15 tons of Malagas from 500 vines. In previous years I held my grapes and shipped them for what they would bring. This year I contracted them ahead at $20 a ton and wish I hadn't."

Packing and Grading. — Malaga packers in Fred Hanson's shipping

PUMPS



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sheds near Clovis, pack the better bunches of big, clean berries in one crate which is afterwards stamped "Clusterettes," and the smaller bunches not so shapely but all of perfect berries, into another crate beside the first one, and this grade is called by no distinctive name. Of course all crates are stamped with the variety name. The very best bunches are laid aside, probably two or three big boxes per wagon load of grapes; and these are packed into crates labeled "Clusters." These bunches are so big that the top of a crateful has a star shape with eight points. Small enough bunches to fill in between the points are not used. They rise so high above the crate side that not only one cleat ¾ inch square must be used across the ends, but another is nailed on top of that, and when the cover is nailed on that, it bulges up so the next crate stacked on top of it presses on the bulge. They settle, however, in 24 hours, and the skin does not break under the pressure. This, however, is the extra high cleating complained about by the Chicago auction man when he said it sometimes tipped over endwise of the crate and permitted the weight of upper crates to rest on the first. The grapes are wilted to make the stems limber, then the packers curl each bunch compactly, using the largest bunches on top but filling between with smaller ones so that the top of a clusterette crate is a solid slightly rounded surface of grapes with only one stem showing at the center. A girl does nothing but pull off yards of bright colored baby ribbon and tie a big bunch of it to the stem at the center on top of all crates and clusterettes. This is just to give an attractive touch and seems to pay.

Inspection as to Ripeness.—Three packing houses are located close together at this siding, and one inspector for the California Green Fruit Ass'n takes care of all at present. When a load is coming to one of them, a flag is displayed, and the inspector tests the grapes for sugar content. If up to the 17 per cent. agreed on last summer at the instance of the Association, the grapes are packed and the crates marked with a circular stamp reading, "Tested as to ripeness, Cal. Green Fruit Ass'n." The name of the grower is also put on each crate.

Loading the Cars.—The crates are then trucked into the car and stacked eight or nine deep in five rows lengthwise of the car, leaving several inches space between rows to allow refrigeration to act evenly. On top of each third layer, a ⅜x1-inch strip is laid crosswise of the car on top of one end of each crate and nailed to each crate by two shingle nails to keep the crate in place. One end rests against the side of the car to prevent sliding in that direction. The other lacks a few inches, so the next cross strip rests against the other side of the car. The top strips are cut in two at center and spread to rest against both sides. These strips take some of the weight from the bulge, too.

Bracing the Car.—When about 930 crates have been placed, there is an aisle about two feet wide left across the center of the car.

Beginning at the farther outside row in this aisle, vertical 2x4's are set against the ends of the crates, and three pieces of 2x4 are sawed just long enough so they must be pounded hard to drive them into the space between the verticals. This tightens the crates from one end of the car to the other, though they have been packed as tightly end to end as possible. The bottom one is driven first, then the other two at equal intervals to the top layer. Then all are toe-nailed to the verticals and the lower one is fastened to the floor with three big nails. When all five rows are properly fixed, if any broken crates are found at the eastern market, the railroad pays the loss, which is usually due to hard bumps given the car in switching at terminals.

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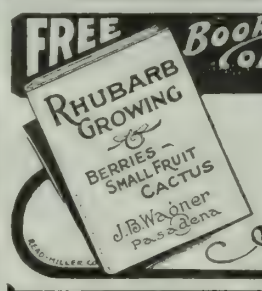

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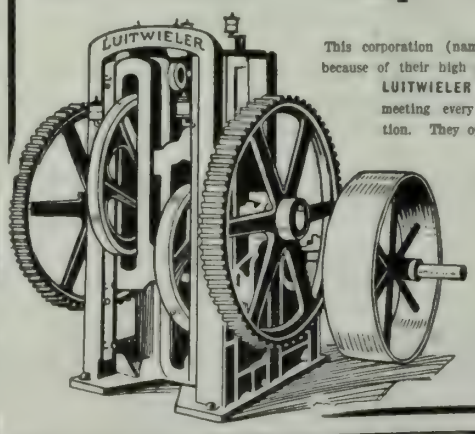

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Random Olive Pointers.

[Written for the PACIFIC RURAL PRESS.]

"If my olives set too heavy a crop, I will summer-prune them to thin them out," said F. S. Briggs of Palermo, who has 3½ acres of Missions and Ascolanos that yielded him 12 tons last years.

"But we usually wait till right after the crop is off and then simply balance the tree and comb the snarls out to open up the inside and distribute the new growth evenly over the whole tree. It stands to reason that the sooner you can do the cutting, the more economical it is, for what is the use of allowing the tree to put a lot of energy into twig and wood growth that you are going to cut out later anyhow?"

His neighbor, S. B. Onyett, does not prune till February, so new wood growth is encouraged in summer. He had 3 feet of new growth last summer on his home grove of 138 trees. He bought these in a very yellow-leaved run-down condition but brought them up to a yield of 6½ tons last year and a bigger crop this year. Part of the increased crop and vigor of trees is due to heavy fertilization, not much is due to deep cultivation, for Mr. Onyett believes he ought not to disturb the roots much, doing all cultivation with a disk. He says it is the nature of the olive to grow in rocky places where it can't have much cultivation. However, he plowed and cross-plowed it this year for a change.

He believes in low heading, 6 or 8 branches 6 inches from the ground, using all trunk space for production of bearing wood and preventing the sunburn which retards sap flow if it does not kill the bark. He thins out the inside but leaves the branches low to the ground on the outside of the tree.

For fertilizer, Mr. Onyett is fortunate. His grove borders on the railway side tracks and he cleans out the stock cars, getting 1000 to 2000 pounds per car. Besides this, he uses a heavy cover crop of bur clover and plenty of commercial fertilizer.

This is applied before May and disked in; then water is run through furrows four feet from the trees and the ground well soaked to keep it moist down to the underground moisture. So soon as it is dry enough, it is disked; and once a month after that it is irrigated and disked till fall rains come.

E. W. Fogg, the pioneer olive planter of Oroville, believes that water is the prime essential in olive growing and he too does not disturb the roots after May, because such a large proportion of them on irrigated land are near the surface. These, if cut with a plow, give the tree a serious setback in spring. He has water running in his 40-acre grove all the time from a pipe system, but of course, there must be thorough drainage.

One of the troubles there is shriveling by the hot north winds, and if delivered to the packer in that conditon, especially if there has been a cold spell, tht packers refuse to pay the contract price, thinking the olives have been frosted. The shriveling due to hot winds may be remedied by proper application of water and the 60 per cent. reduction in price avoided. Down at Lindsay in Tulare county is a 40-acre orange grove surrounded by two rows of six-year 20-foot manzanillo olive trees on three sides and six rows on one side, with two rows across the center. They are set 22 feet apart, finely cultivated, well fertilized with stable manure, beautifully shaped, bearing a heavy crop now. Last year from the nine acres used by these border trees, 25 tons were sold for $4,000 according to F. W. Higley, who manages the place for Bohland and Long.

Using olives for border trees seems characteristic of this and other sections of the State, and it seems a good idea, for they are a good windbreak, the roots reach the washings from the road, and autoists do not bother the fruit.

Olive Orchards Are Very Popular.

GREEN SLIME ON WATER COOLER.

To the Editor: Is there anything that can be done to prevent the green slime that collects on the sides of a water cooler?—M., Fresno.

(If you wash the outside occasionally with weak bluestone water it will prevent the growth of the algae which cause the green color. —Editor.)

IRIS

Price list, describing over 200 species and varieties, mailed free upon request. Upon receipt of 15c in stamps, we will mail you copy of our new Illustrated Catalog. Color plate alone is worth the price.

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Moneta, California.

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CARLOAD LOTS.
HORSE, COW or SHEEP.
Fresh or Well Rotted.
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The persistent calls on us for agricultural machines by Jackson friends of 40 years' standing, have forced us to enlarge our factory and install additional machinery. Our line has been revised and improved and the
JACKSON QUALITY
is retained in our
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BUCK RAKES
HAY STACKERS and LOADERS
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Either Wood Frame or Steel Frame
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For Rope or Cable
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(To Connect to Wood Frame or Steel Frame Threshers)
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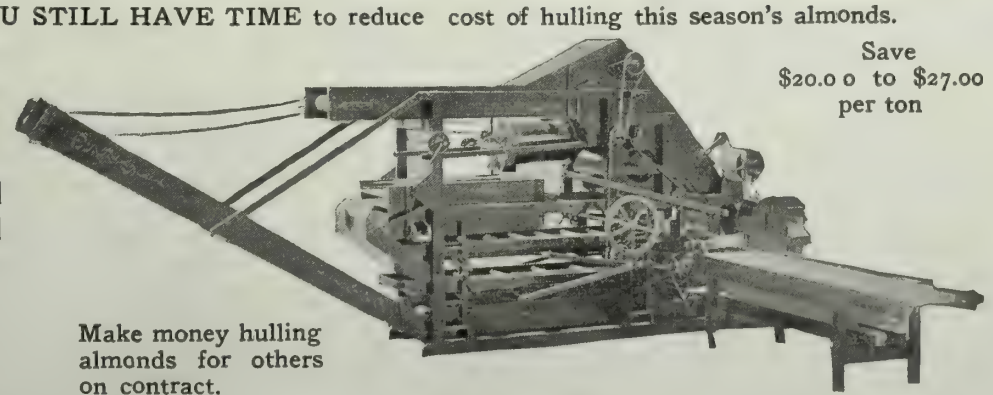
Byron Jackson Iron Works, Inc.
WEST BERKELEY, CAL.

$5.00 Per Ton--ALMOND HULLING--$5.00 Per Ton

YOU STILL HAVE TIME to reduce cost of hulling this season's almonds.

To Make Bigger Profits You Need The Read Almond Huller and Separator

Save $20.00 to $27.00 per ton



Make money hulling almonds for others on contract.

You must act at once. Advise us in your first letter how many tons you will have. Definite information as to size necessary will be furnished immediately.

Be Sure You See Our Exhibit at the State Fair

Box 123 Schmeiser Manufacturing Co., Davis, California

Fumigating Gray Citrus Scale.

[Written for the PACIFIC RURAL PRESS.]

Tulare county has gray citrus scale, a new botheration, but they won't have it long, if the present active measures are as effective and long continued as those in charge of the work believe. They intend to fight it till the rainy season starts, and then some more next season.

Two possible ways of control are being tried out thoroughly. The one most generally worked is fumigation, the other is spraying. Both seem to be effective; neither is known to be entirely certain death to the scale, though 98 per cent are usually found dead after fumigation.

The county has undertaken the work, bringing R. P. Cundiff from Riverside, where he was horticultural commissioner 15 years and gained probably as much experience as anyone, in fumigation. He oversees the six gangs of five men each, three of which are working near Lindsay, and three near Porterville. Each gang uses 32 to 35 octagonal tents with an outfit the total cost of which is about $1800.

Experimental contract fumigation, started late last year, failed to worry the new pest. But early in June of this year Mr. Cundiff began all kinds of fumigation experiments in the orchards around Porterville to determine the most effective safe dose which would be cheap enough to be practicable. After spoiling much fruit in its immature stages, the safe dose in this climate was determined and it was found that after July 15th of a normal year such fumigation does not hurt fruit or trees. The county pays for supplies, tents, labor and supervision, and then collects the actual cost from the orchard owner.

Modus Operandi.—A gang of five men goes to work in the evening when the temperature gets down to 80 degrees. Gang No. 3's operations are described because they were most convenient for observation. The work is done at night because the combined heat of the day sun and the cyanide would injure or kill the trees. The tents used are great sheets of medium weight white canvas. Gang 3 has 30 of these 43 feet square and two, 40 feet square. Large trees require bigger ones and several will soon be in use 55 feet square, especially near Lindsay. About twelve feet apart and near one edge of the sheet are two iron rings fastened to the canvas by ropes sewed in a right-angle shape, the point of the angle containing the ring and being near the edge.

In starting to fumigate an orchard a "tent" is unrolled at each tree, with the ring side on top. W. E. Loving and Cliff Hapgood of Gang 3 use poles about 14 feet long tipped with a spike, which is inserted through the tent rings. They then lay the poles flat on the ground on both sides of the tree to be treated, with the ends about opposite the tree trunk. A rope longer than the pole is tied to the spike end permanently. Each man places a foot on the end of his pole, pulls on the rope, which swings the rings around upward and the edge of the canvas with them. The man steps backward as the canvas rises and pulls it down on the other side. A 43-foot canvas over a tree 12 feet high spreads out considerably over the ground. All tents are put up on a single row. When the next row is to be covered, they are dragged over the trees in much the same way but with less labor and no laying out of the tent. It just drags off one tree onto another.

With the tent placed, foreman Roy Halbert measures it for the dose of cyanide. A line is painted in black across the center of the sheet and between the rings. It is measured in foot-lengths, which are numbered from center. Another such line is drawn about three feet from it on either side and one such at right angles to these. In pulling the tent, one or the other of these lines runs pretty closely over the center of the top. This line is read for the number of feet from the ground on one side over the tree to the ground on the other. Then Mr. Halbert attaches a tape measure by a patent clasp to a fold of the tent about four feet above ground and carries it around the tree, kicking the tent in even with the edge of the tree as he goes, walking on the remainder of it that lies on the ground.

Having measured the distance around and the distance over, he refers to a chart and calls out the number set opposite those two figures on the two edges of the chart. That number indicates the dose that tree is to get, and has been figured out by Mr. Cundiff after many experiments here, as the proper amount to kill the scale in 50 minutes on a tree under a tent of that cubic contents and made of that material. Experience and a good memory make the chart unnecessary, but still it is carried by a string hung over the foreman's neck. The dosage on the orchard observed varies from 4 to 9. It is a well kept orchard, having been replanted as old trees were taken out. Too strong a dose kills the tree; too little doesn't kill anything except time, and it has been found that the killing effect is spent in 50 minutes.

Fred Gilchrist and Otto Harmon apply the dose immediately after it is called out to them. They have an outfit on a four-legged stand carried by two handles on each end of which are extensions of the frame. The front man weighs out the sodium cyanide which comes in little molded oval white cakes about an inch across. When it gets onto the hands of the operator it makes them feel sleek. When it gets into his stomach, he might as well be a gray scale or a chicken roosting in a fumigating tree.

The weighing scales, lantern, and record blank which keeps the figures of each tree's dosage, are on top of the open sided box containing the cyanide tablets. When the dose has been called, weighed out, and recorded, Mr. Harmon, the cyanide man, steps across the intervening row to the proper tent, rakes its edges up, gives it a sidewise jerk, skillfully throws his right shoulder under it as he stands close to the tree, and holds it up with the outstretched left arm so there is an open door of ample dimensions.

COVER CROPS

Fenugreek
Melilotus
Burr
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Vetches

produce humus and nitrogen in the soil — the two big essentials in groves and orchards. From our studies of the needs of the citrus belt this year, we are strongly recommending the following:
FENUGREEK: is a rank and rapid grower, producing successfully on poor soils.
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We cannot too strongly advocate the inoculation of seed for best results. Hundreds of our patrons testify that the use of

FARMOGERM

300% Crops

has increased their crops from 200 to 300%, thus giving more humus for the soil and more nitrogen -- gathered from the air by the nitrogen gathering bacteria and deposited in the soil through the nodules they form. The cost—less than $2.00 per acre. For booklet on *Farmogerm*, advice on Cover Crops and Prices, write to Dept. R

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Established 1871
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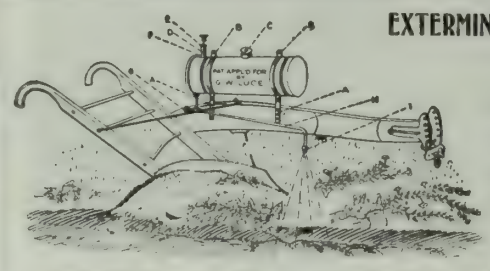
LOS ANGELES, CALIFORNIA



EXTERMINATES MORNING GLORY
Johnson Grass,
Noxious Weeds and
Injurious Insects
with NONPAREIL
and the PRESTO
PLOW TANK

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit. $3.50 f. o. b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.
The growing season and not the dormant period is the right time to do the work.
One large grower purchased during 1913 $2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.
Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphis, Etc.. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

WHEELER, REYNOLDS & STAUFFER
624 California Street. San Francisco, Cal.

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RELIABLE TREES

Trees that grow and bear true to name. Now booking orders for next season. Write us now about what you will want.

Kirkman Nurseries
2525 Tulare St., Fresno, Cal.

Make $2000.00 more per Year

You Can Make Big Money With a well machine that makes irrigating wells fast and at a low cost. Demand for such wells is unlimited in California and the entire Southwest.
The best and fastest machine for this work and this territory is the
IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE
Bores thru gravel, sand and clay like a streak of lightning. If rock is struck it drills thru that. Forces casings perperfectly. One man and one team can run it. You can make $1 an hour for your spare time.
Write today for catalog and EASY PAYMENT proposition.
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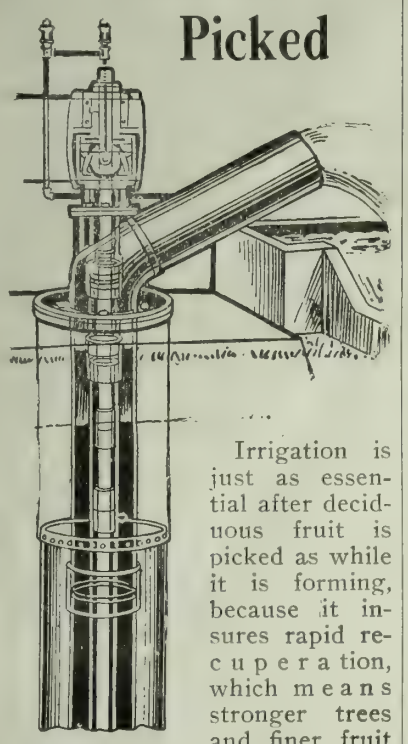
SACRAMENTO, CAL.
We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

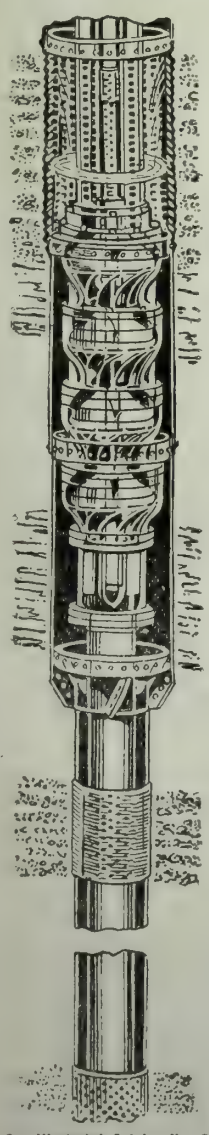
IRRIGATE

After Deciduous Fruit is Picked



Irrigation is just as essential after deciduous fruit is picked as while it is forming, because it insures rapid recuperation, which means stronger trees and finer fruit the following year.

Be prepared for Fall irrigation by installing the



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It will surprise you how quickly a Layne & Bowler Pump can be installed. Its simplicity, compactness, and practicability make this possible. The increased profits derived from your land will quickly repay what you invest.

Water is produced at the very lowest cost with this pump.

Estimates gladly given. Let the World's largest water developers solve your pumping problems.

Our Illustrated Catalog No. 25 tells all about this pump and screen. It also gives valuable irrigating information. Write today for it.

Layne & Bowler Corporation

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While he is doing all this, Mr. Gilchrist, acid man, wearing long-sleeved rubber gloves, has repeated in a loud voice the number of the dosage ordered, has measured out that number of ounces of water in a graduated glass pitcher, and poured it into a jug-handled earthenware vessel 14 inches tall. He has then measured an equal quantity of sulphuric acid and emptied it into the water, grabbed the weighing-panful of cyanide in his left hand, and rushed with his fuming vessel to the opening of the tent made by his partner. The vessel is set under the branches so it cannot touch the tent or the leaves, and the cyanide dumped in. A speedy withdrawal and immediate dropping of the tent outward as far as convenient is then advisable, for there is set up one awful tempest in that teapot. Unsuspecting fowls in the trees give one squawk and die happy. One of the boys on a Lindsay gang started to open the wrong tent a few nights ago, got a whiff of the wrong atmosphere, and was unconscious for two hours. The hydrocyanic acid gas thus generated is very heavy and rests on the ground, displacing air, especially in hot weather. An emergency outfit is carried with each gang to resuscitate any who may be overcome. And wherever that sizzling mess spatters, there isn't much cloth left. The lower ends of the trousers of the acid men remind one of a watermelon-patch shotgun not evaded. And wherever it spatters on the tent, a patch must be put. The residue is of simlar nature, so that in emptying the vessels before refilling each time, the thickish brown liquid is poured at center of the space between trees. What will eat cloth and human flesh will eat tree roots too.

The violent sizzling lasts not more than ten minutes. Not all the scales are safely dead for fifty minutes. But he courts eternity who walks back close to those tents in the dark until half an hour is past. For the canvas material leaks prodigiously. Gas-tight tents could be made by painting them inside and out with linseed oil, but they would be too stiff and heavy to handle profitably.

Two and a half acres is a good night's work for a gang. The escaping gas gets into their lungs, necessitating fresh air after every change of tents, so only enough tents are used to require about 32 minutes in the changing. That number usually covers a row of trees across a square ten acres.

H. W. Manter, who patches tents for another gang, takes his outfit on a one-horse sled. Easel-shaped frames are used to hang the tent over, and Mr. Manter gets inside to look out through all the holes. Whether minute or not, he sticks a chicken feather through each and on coming out makes blue chalk rings around them, pulls out the feathers, and sews a patch on the outside with a big sewing machine, the propelling foot at the needle being turnable at any degree so the tent cloth need not be moved around. He is trying mending tissue on smaller holes, but fears that the hot climate will melt it. The holes are mostly caused by spattering of the acid mixture or by laying the tent where some of the residue has been emptied.

Mr. Cundiff calls attention to the fact that both the humidity of the air and its temperature are determining factors as to the quantity to be used per cubic foot of tent space safely; but there is no question that the chemically pure sodium cyanide mixed with sulphuric acid 66 degrees Baume and water makes the most effective scale killer known and is safe when applied in correct quantities in consideration of atmospheric humidity and temperature. Impure sodium cyanide burns the trees. Experiments such as he made for six weeks before starting commercial fumigation, are necessary in any locality, and then careful watch is necessary to vary according to changing conditions.

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Grown on Sandy Loam Soil

No Spike Roots.

Almonds on Almond & Peach root.

All Varieties of Fruit Trees for sale.

Write for Special Prices.

Also Real Estate in small tracts, planted and cared for on very easy terms.

Plenty of water.

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NOW IS THE TIME TO SOW PANSY AND STOCK SEED.

Payne's Royal Exhibition Pansy. The best strain ever offered. Packet, 25c

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the can't be beat fruit and alfalfa section of the San Joaquin Valley where land prices are still low. Fill out and send today the following coupon:

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Kindly send me your free booklet "How to obtain a farm at **Fairmead** on easy terms."

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If you want the best

TREES

Write for Price List.

UNITED FRUIT CO.

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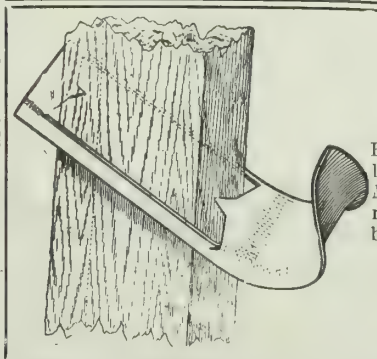

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ARE THE BEST MADE

Have a smooth rounded surface for the limb to rest upon. STRONG, WELL MADE, WILL LAST FOR YEARS. Will not CHAFE THE TREE like the wire brackets.

Sample and prices sent upon request.

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PARKER MACHINE WORKS

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CONSULT ME!

I will convince you that I am able to furnish you water. Let me bore a well on your property at my own expense at my risk. If the well I bore has not the capacity agreed upon, you pay nothing for it. I give bonds or deposit money in the bank for my responsibility.

J. VON GAL S., P. O. Box 489, Lindsay, Cal.

Agricultural Review.

Wheat and Politics.

The American wheat crop of 950,000,000 bushels, 200 millions above normal, bids fair to be a world factor in politics or to make American wheat farmers comfortable for years to come.

Investigations into the increased cost of living have brought out the statements from those who ought to know, that if the United States should embargo wheat and its products, the warriors of all Europe would be starved into peaceful frames of mind. Of course, such a restriction would make wheat good hog feed in the United States, for we humans can't eat it all.

That Europeans realized their need of our wheat while preparing for war, is evidenced by the increased exports in July. It was 9,397,745 bushels during July, 1913, and 26,158,222 bushels in July, 1914. But it is reported that the Kansas farmers are still foxy enough to hold their wheat for further improvement in prices, which will follow the Europeans' occupation of eating or tramping down their wheat fields and not leaving enough men at home to replenish the supply. Their heavy-hearted women will plant and gather as much as they can, but that will scarcely affect the demand for soldier food.

More than a million bushels were recently shipped to Switzerland, the proposed hospital country of Europe, being granted safe passage through France and Italy.

The war effect on wheat prices was strikingly shown last week when a rumor that the allies were preparing for a three-years war, sent prices skyward, May deliveries being sold at $1.25 per bushel in Chicago. This is a surprise to those Porterville farmers who sold two-thirds of the wheat crop from their section at $27.50 per ton or 82½ cents per bushel.

But the barley growers there have taken notice and would not sell at the $15.50 per ton offered, and already that grain has jumped to $25 for December delivery.

How We Need Germany.

It develops, however, that we are sorely dependent on war-invested Germany for much that is agriculturally necessary in our State.

Not only do we need German cyanide to save ourselves from the gray citrus scale, sugar-beet seed to save us from the importers of sugar, and potash to make our crops grow, but it is said that there is an insurrection brewing among musicians in America against the European war because it is shutting off their supply of orchestral sheet music, most of which comes from Germany.

The recent sudden rise in cost of sugar is also laid indirectly at Germany's door, for she and Austria usually supply England with 1,500,000 tons. The refiners claim that there was only enough sugar in America to last till the new crop comes in October; and that the unexpected English demand withdrew 100,000 tons in a week, causing American jobbers to bid up prices to lay in stocks, and also causing an unusual stocking up on the part of consumers. With the producers of 45 per cent of the world's sugar crop doing something else, the future demand promises to become still more acute. This may be supplied by increased sugar beet acreage, the largest part of which is west of the Rockies. An additonal encouragement to California beet sugar production is in the recent order of the Interstate Commerce Commission reducing sugar rates to the Mississippi and Chicago nearer to the New Orleans rate to the same points.

Public Utilities.

Despite early and continued efforts of the California Railroad Commission and the California railroads to prevent a car shortage during crop movement, there is prospect that fall shipments will be delayed unless more radical measures are adopted. Three S. P. superintendents recently met in Fresno and decided to recommend an increase of 10 per cent in the weight of fruit shipped per car. The minimum carload now is 26,000 pounds, a figure which fruit shippers are trying to

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VICTORIA, AUSTRALIA, WANTS SETTLERS. Special inducements; government land, railways; free schools; cheap irrigation, 50 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

320-ACRE WELL-IMPROVED FARM will be sold cheap if sold at once. 640-acre stock and dairy ranch, well improved and well watered. Will sell 50 head of cows and young stock with or without the ranch. For particulars write C. P. Gould, Box 27, Parkfield, Monterey county, Cal.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg., San Francisco.

FOR RENT OR SALE—1018 acres of grain and alfalfa land near Williams. H. V. Traynham, College City, Cal.

READ my advertisement on another page. I have just what you are looking for in lands. G. M. Rea.

FOR RENT—DAIRY RANCH OF 170 ACRES—Terms Cash each month. All fenced with steel posts and 57 inch woven wire, hog tight. Electric pumping plant, 1200 gallons per minute, 24 to 26 foot lift. About 80 acres in alfalfa and 25 acres more ready to plant. 16 acres set to two-year-old peach trees (good stand). About 30 acres now in corn for silo. Balance, grain, corn or alfalfa land. Good modern ranch house and a helpers' house, bath and electric lights in each house. Fine grove of trees, and family orchard around the buildings. Large new horse and hay barn, machinery building and blacksmith shop. Dairy barn and milk house the most modern in the State. Silo is of concrete and steel (with water tank in top, of same material) holding about 12,000 gallons. Water piped to all buildings. Power and electric lights where needed. Private telephone from town to the house, connecting with local and long distance wires. The ranch fronts the State highway and is three miles from the County seat of one of the best counties in the San Joaquin Valley. This ranch should support from 100 to 150 cows and many hogs in ensilage and roughage. The equipment is up-to-date in every way. Address, Owner, 909 Cowper Street, Palo Alto, California.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

FOR SALE—Ten acres of bearing almonds, one mile west of Oakley. Also family orchard, good house, barn, windmill and tank. Will sell on easy terms. Write Mrs. G. A. Mayes, Oakley, Cal.

TREES AND NURSERY STOCK.

OREGON GROWN WALNUT TREES—GRAFTED FRANQUETTES—(Vooman strain). Non-irrigated. Grafted on 3-year-old California Black Walnut, extra large lateral rooting. Scions from my 35-acre bearing orchard at Canby, Oregon. Trees from 5 to 9 feet high. Please state when writing number of trees wanted. Prices according to number and size of trees. Address Dr. F. H. Walgamot, 602 Medical building, Portland, Oregon.

THORNLESS CACTUS SLABS for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 4, Riverside, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

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AIRDALE TERRIER PUPPIES—All eligible to registry. Best breeding in the land. Fifteen dollars each. L. H. Marshall, R. 3, Fresno, Cal.

BEES.

IT PAYS TO KEEP BEES on the farm; raise your own honey, make considerable profit besides. We can supply gentle Italian bees at $4.50 for five-frame colony, $5 for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. SPENCER APIARIES CO., Box 12, Nordhoff, Cal.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

WANTED.

WANTED—Responsible party to take charge of business in each county. New Automatic Combination Tool, combined wire fence stretcher, post puller, lifting jack, etc. Lifts or pulls 3 tons, weighs 24 pounds. Sell to farmers, shops, teamsters, etc. Descriptive catalogue and terms upon request. Harrah Manufacturing Co., Box M, Bloomfield, Ind.

SUPERINTENDENT for 1000 acre citrus and deciduous orchard, grain, alfalfa, hogs and dairy property. Thorough California experience absolutely essential. Very liberal compensation to competent man. Box 226, Pacific Rural Press.

WANTED—To buy a car of wheat, also one of Milo maize or Egyptian corn. Mail samples and state price. E. A. Walker, 605 South Bristol street, Santa Ana, Cal.

WANTED—Working foreman for hay and stock ranch; must understand general farming. Experienced up-to-date man needed. References required. Address Box 297, Yreka, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

WANTED Dairyman to run large dairy on shares. Box 124, Pacific Rural Press.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50 per cent. of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

"SMITH'S PAY THE FREIGHT." To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

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The Direct Drive

Does away with all Double Hitch Belts, Gear Drives, Chain Drives, etc.

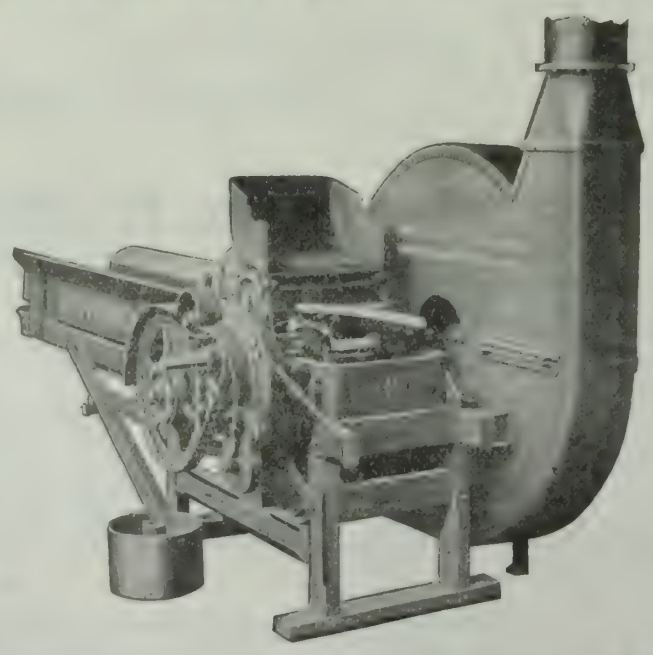
The "OHIO" has its drive pulley, cutting cylinder, all on the main shaft. Our compact set of gears does the work. Avoids trouble and repair bills.

The "OHIO" cuts EVERYTHING —Alfalfa, Field Peas, Soy Beans, Sorghum, Kaffir Corn, Milo Maize, Corn—It's all the same.

Salem, Ohio, Ot. 23, 1912.

The Silver Mfg. Co., Salem, O.

Dear Sirs: Our 14x32 ft. silo was filled with the "Ohio" No. 17 and will say that in the six years we have filled silo we have never had the same amount of ensilage cut in the same space of time and as satisfactorily done. The 110 tons was cut and elevated in 5 hours. We had five teams hauling from nearby field and could not supply its capacity. It's a dandy. C. D. CARR.



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A single lever, almost human, giving operator absolute control of "OHIO" feeding mechanism at all times, stopping, starting, or reversing at a touch.

No. 14 at State Orphan Home, Corsicana, State of Texas.

The Silver Mfg. Co., Salem, Ohio.

Gentlemen:—It affords me pleasure to say that after three years' trial, your No. 14 "Ohio" Ensilage machine is still doing fine work. We have just finished filling a 100-ton silo with sorghum and found no trouble whatever. We are now operating the machine with a 10 H. P. motor and it gives perfect satisfaction. It certainly does the work.

Yours truly,
JINK EVANS, Ind. Mgr.

ASK YOUR JOHN DEERE DEALER FOR PRICES AND INFORMATION, OR WRITE US

JOHN DEERE PLOW CO. of San Francisco, Cal.

reduce to 24,000 because the bigger load causes the top tiers of fruit to decay too soon.

Certain grain warehousemen of the Sacramento valley have started concertedly to raise their storage rates, acting on the advice of a lawyer who told them they could do this when they pleased and fight out the controversy before the Railroad Commission later. The Railroad Commission, not asleep, learned of this in time to save the warehousemen trouble, and sent them a letter saying: "It is unlawful for warehousemen to collect any higher rates for the storage of grain or other commodities than are on file with this commission." It was also suggested that the warehousemen apply for permission to increase rates, when a hearing of all interested would be held and a reasonable rate fixed.

Deciduous Fruits.

Fresh fruit shipments have been universally heavier in California this year — Vacaville beat her last year's mark on Aug. 26 by about 20 cars; the total for the State is found on our market pages. Eighteen cars of pears were shipped east from Anderson, Shasta county, 32 having been sent to canneries. Paso Robles sent a carload of Bartletts and Bellflowers south; Tulare county pears have produced heavier this year than usual, and practically all pears are off hands. Of the few sections where peaches promised poorly, Selma finds it up to normal. Modesto is shipping peaches with grapes. Hanford's Phillips are extra good and plentiful. Anderson has 300 tons dried.

The cannery outlet for overproduction looks so good to suffering Chico farmers that a cannery is to be erected covering 100x200 feet, besides three smaller buildings. Fresh fruit shipments are about over, the canning season for fruit is nearly complete, dried fruit is waiting for a chance at oversea markets, but some discouragement is felt about dried peach prices.

Grape shipments recently began at Modesto with Thompsons and Malagas. In the Fresno country Malaga shipments overloaded the markets so that vineyardists turned their attention to Thompsons until the strain was relieved and the price of Malagas up. The San Joaquin valley crop is fine, but Napa county lost much of her crop by late frosts. Raisin picking is on in earnest and the demand for the new crop is strong.

Citrus, Nuts, Etc.

Florida and Southern California are vieing with each other in citrus crop predictions for next year. Both have been recovering from severe frosts, the next Florida crop being estimated by the manager of the Florida Citrus Exchange at 9,000,000 boxes, 1½ million more than last year. Dr. H. J. Webber of the Southern California Citrus Experiment Station believes the next crop in Southern California will exceed all records. R. P. Cundiff, in charge of Tulare county citrus fumigation, thinks the crop there will be nearly normal, though reported as less than ¾; and the uniform size and extra quality will help some, too. Butte county reports a pretty good crop of oranges and a bumper crop of olives.

The efforts of the California Fruit Growers' Exchange to provide markets for such a crop are supplemented by the proposal to can those too ripe to ship. This would be in addition to the marmalade, etc., that is now taking much of this fruit.

Co-operative olive growers' associations report difficulty in disposing of their crops, due to supposed concerted action of the regular olive traders. They are far from hopeless, however. Other growers' organizations have had the same fight, and there are plans which now seem likely to solve the present difficulties. Meanwhile, oil olives are being advanced in price as much as 50 per cent on account of the war.

An embarrassingly large fig crop at Fresno, with a good market for all of it, is beginning to be packed by the few laborers who can be obtained at prices which allow girls to make $1.50 to $2.50 per day.

Orange county walnuts, now dropping under favorable conditions, are not yielding so heavily as in some other sections. Practically all of the crop has been sold at prices to be made late in September. The walnut trees in Nevada county are becoming the hosts of masses of tent caterpillars.

A carload of Chico almonds is on its way through the Panama canal.

Organized Farm Labor.

Organization of farm labor has for several months been agitated and threatened by the American Federation of Labor, and now has influential reinforcement in the statement of President W. M. Giffen of the Cal. Associated Raisin Co. that collective bargaining for Oriental labor in the Fresno vineyards has proved successful in obtaining improved wages and conditions for the workers, as well as far greater convenience and stability for the employers. Whether the same system would work with Americans as Mr. Giffen believes, remains to be seen, and also whether it would work in sections where a greater variety of work is to be done.

Reports from Livermore are to the effect that a large sheep grower of that section has sufferd a havy loss to his flocks in the island sections of the San Joaquin, through an outbreak of anthrax.

It is estimated that $66,000 a year is paid out by Stockton creameries for butter fat received from dairymen. As there is still much room for expansion along dairy lines in that locality this figure should be materially increased in the future.

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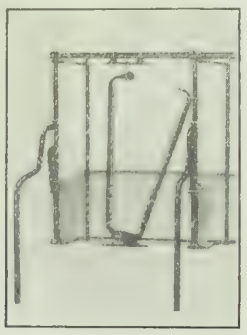
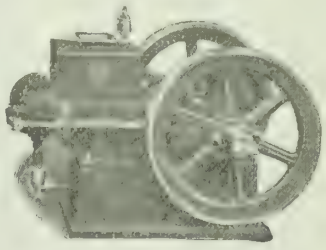
DAIRYMEN:

You are cordially invited to make our exhibit your headquarters while attending the Fair.



James Steel Stall.



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(80 A. R. O. Sisters, three of which hold world champion yearly records.)

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Goose of the Golden Eggs.

[Written for the PACIFIC RURAL PRESS.]

In that classic collection of fanciful tales known as Aesop's Fables there occurs this story:

"A certain Man had a Goose that laid him a golden egg every day. Being of a covetous turn, he thought if he killed his Goose he should come at once at the source of his treasure. So he killed her, and cut her open, when great was his dismay to find that her inside was in no way different to that of any other Goose."

The moral which is placed after this narrative runs:

"Greediness overreaches itself."

No fable in Aesop nor parable in Scripture more aptly describes the operation to which the California farmer would be subjected, figuratively, by the enactment of the proposed eight-hour law.

Under an amendment to our State Constitution adopted some years ago, and commonly known as "the initiative," direct legislation may be enacted by the voters without recourse to the Legislature; and under this provision an effort is now being made to place upon the statute books of California a law to read as follows:

"Any employer who shall require or permit, or who shall suffer or permit any overseer, superintendent or foreman or any other agent of such employer, to require or permit any person in his employ to work more than eight hours in one day or more than 48 hours in one week except in case of extraordinary emergency caused by fire, flood or danger to life or property, shall be guilty of a misdemeanor and upon conviction thereof shall be fined not less than $50 nor more than $500 or imprisoned in the county jail not less than 10 nor more than 90 days or both so fined and imprisoned."

The alchemists of old sought in vain for a method by which they might transmute the baser metals into gold; Aesop, with one stroke of his pen, outdoes the alchemists. But it is more than fancy and more than a figure of speech to say that the farmer, forgetful of time and the hour, has in all ages and lands more nearly approached the solution of the problem than has anyone with chemist's formula or wizard's wand; for he has wrought with the soil and has brought forth those things which are more essential to life than is the yellow metal. The farmer, if you please, is the Goose of the Golden Eggs; for day by day, and from sun to sun, he is patiently and honestly accomplishing the great transmutation.

And now, in the so-called Golden State, they are seeking to bring about his undoing. He has not been to the ant to learn industry, for the vicissitudes of his own calling have borne it in upon him. When drought or flood or frost has wrought havoc with his crops he has recked not of his loss but has patiently planted again. His constant contact with Nature, in her countless visible moods, has made him a philosopher of the optimistic school. What matters it to him that the clock has struck five if there yet remains in the field something that should be in the granary; for his family must be fed—and in feeding it he is inevitably feeding the nation. Eight hours a day for a farmer? Why, the farmer is not even asking for a ten-hour day for himself. Nay, rather, could he have the assurance of good crops and fair prices he would gladly cast his clock into the bramble-bush and forget the going down of the sun.

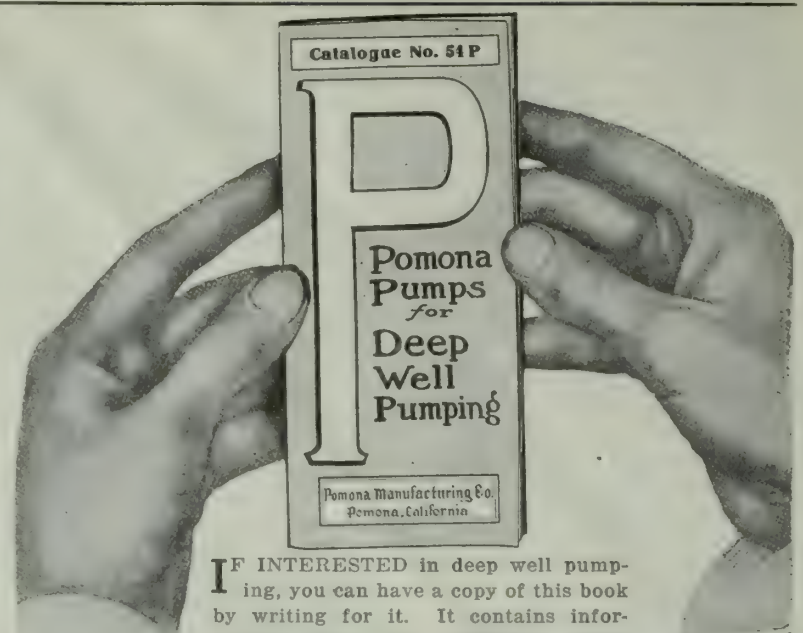
I know whereof I speak, for I am a farmer myself. I know that, in the insistent demand that Congress exempt labor unions and farmers' organizations from prosecution under the anti-trust laws, the farmers have no part and are simply being used as a blind. The farmer is not spending his time in seeking ways to dodge his duties to mankind, but rather in finding means to make two blades of grass grow where none grew before. Eight hours a day for a farmer! Why, if these horny-handed sons of toil insisted on resting and eating sixteen hours a day the cost-of-living cry would swell to a pandemonium.

I can understand how, in the occupations of the shop, the mine or the factory, the demand for shorter hours of labor is made to appear logical; but I cannot understand how the very people who are crying out against the price of bread and meat can at the same time demand that those who are engaged in producing these commodities should shorten their hours of labor—and thereby inevitably shorten their production; for surely no law would be fair which forbade the farmer's hired man to work more than eight hours a day and did not assure the farmer himself the same easy task. Yea, also, the farmer's wife.

But the fact remains that this proposed law will be upon the ballot at the November election, for the petition asking for its submission to the voters has received the requisite number of signatures and the Governor has already ordered the preparation of the pro and con arguments which must accompany it on the ballot.

From of old it has been said, "Whom the gods would destroy they first make mad." More in sorrow than in anger I assert that the labor unions of America are mad; for in this land of broad fields and great natural resources there exists a conditon of unrest for which there is no justification. From the landing of the Pilgrims down to the present moment, the task of the toiler has been steadily lightened and his opportunites steadily made greater. Yet despite this his discontent has grown apace. The virgin fields we took from the red man have given him cheap and abundant meat and the marvelous development of machinery has given him for necessities what royalty of a century ago would have counted as luxuries. The pinch of poverty due to overcrowding is as yet unknown in our land. Why, then, this cry of oppression of labor?

Here, on the Pacific coast, we are facing what we believe to be the menace of Asiatic invasion. And why, I may ask, do the Asiatics wish to come here? The answer may be found in the remark of a Japanese statesman who recently made a tour of the United States. Before leaving for Japan he made this significant statement: "My people could live on what your people waste."



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is of the plunger type with reciprocating plungers, travelling in opposite directions, the one with a slow up-stroke, the other with a quick down-stroke, and a substantial "lap," thus having the descending plunger in place ready to receive and carry its load before the ascending plunger has reached the end of its stroke, travelling a substantial "dead" distance together, the one receiving, the other giving up its load gradually. Cylinders, valves and all other parts are made of the best materials that money will buy and built to stand up under heavy deep well lifts and to give years of satisfactory service.

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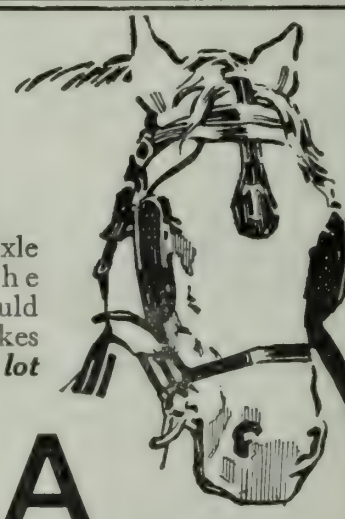

about Mica Axle Grease. If he could talk he would tell you that it makes the load pull a *lot* easier.

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MICA AXLE GREASE

That logic, in substance, has been used to excuse the occupation of America by the Caucasian race; for it has been repeatedly argued that the Indians were not making good and proper use of the country and its resources. Today the millions of Asia, always on the verge of famine, are saying the same of the Caucasians. In sorrow rather than in anger, in the fear that these frugal and crowded millions will arise and enforce the logic, I plead with these same Caucasians to take heed and beware.

From the dawn of history the law of supply and demand has been the arbiter in all transactions involving produce and labor—save where piracy, brigandage, and slavery have held sway. Any attempt to supplant this natural law by arbitrary legislation must fail ultimately, but much harm will be done while trying the experiment. My union labor friends, you are pursuing the farmer with a boomerang which, after smiting him, will return, with added impetus, to smite you. Nowhere on earth is the business of farming done on an eight-hour basis. Any able-bodied man, whether farm owner or farm hand, who is unwilling to work more than eight hours a day is a shirk and a spendthrift and is wasting an undue portion of the strength with which the Creator has endowed him. The plea that a man can and will do as much work in eight hours as in nine or ten does not hold good on the farm.

I have said that the poverty due to dense population has not yet been felt in America. It is, however, in sight. The subdivision and settlement of the stock ranges, with the lessened production of meat and its increased cost, is the first tangible inkling thereof. Another century will see the hayfields so contracted that few horses can be kept by the farmer—and that means more farm labor must be done by hand. We may look eastward to Europe or westward to Asia and see these conditions existing today. To impose an eight-hour day upon the producer in those congested regions would mean manslaughter in the form of starvation. We, who have rioted in the virgin fields of the red man, must recognize that our halcyon days are passing. The eight-hour movement is ill-timed. It is more properly the moment when the nation and the individual should be giving heed to industry and frugality and provision for the future. A shipload of Hindus was recently demanding admittance to Canada. It has been turned back, but it will come again, and the wedge will then enter. If America is to remain the heritage of the invading Caucasian he must cease watching the clock and apply himself diligently to the tillage of his fertile fields.

From time immemorial might has made right and has been the law of nations. If the yellow invasion comes we shall have to live as they can and do. A thousand millions in Asia are awakening to their might and to the use of modern guns.

An eight-hour law would not stand for an instant in warfare. How long would it endure in a world-wide struggle for bread?

WILLIAM M. BRISTOL.
Highland, San Bernardino County.

WHITEWASH FOR SPRAYING.

To the Editor: What is your best recipe for whitewash to spray onto a large barn, for a good lasting job?—C. H. R., Concord.

(To a barrel of water, add about a hatful of lime in small chunks slowly that it may dissolve smoothly and without heating or sizzling. Stir it well and let it stand overnight. By morning the lime will have settled. Take off one-third to one-half of the water from the top. Mix enough lampblack in a pint of turpentine or coal oil to make it the consistency of thin paint and stir this mixture into the slaked lime. Two or three times this much will not hurt. It makes a dead grayish whitewash. If a bluish white is desired, dissolve half a dozen of the little round indigo balls in the mixture, leaving out the lampblack. Use no salt or glue. Add to the mixture one to eight quarts of common black machine oil. With a quart, the whitewash will last several months. With two gallons, it will last several years. This mixture must be vigorously stirred to mix well. It will not clog the nozzle if not allowed to dry there when spraying ceases at night.—Geo. H. Croley, San Francisco.)

BATS IN THE HOUSE.

To the Editor: I have a house that the bats have got into; they are in between the roof and the ceiling, and they are so thick that on a hot day it is almost impossible to stay in the house. I would like to know if there is anything that one can use to get rid of them without disturbing the tenants of the house.—M. E. A., Modesto.

Comments by J. Grinnell, Director of University Museum of Vertebrate Zoology.

The best way I know of to rid a house of bats is to shut them out by closing all entrances to their retreats. This should be done after nightfall, after the bats have gone out for their evening's foraging. Most species of bats migrate, leaving for the south early in the fall. If you wait until about October I think they all will have left and then you could close up their entrances. I would not recommend destroying the bats, even if this were possible, by fumigation. Bats are very beneficial in that their food consists entirely of insects which fly at night; and many of these are the adults of forms such as the Codling Moth and Army Worm which do great damage. A colony of bats in the neighborhood is a highly desirable thing. Only, of course, they should be excluded from the immediate vicinity of one's household.

Wherever bats roost during the daytime the manure accumulates and in course of time produces the unpleasant odor that you describe. The only way to get rid of this is to have carpenters take off the boarding and clean out the roost, thoroughly disinfecting with chloride of lime. At the same time the roost could be closed up tightly so that the bats could not get in again.

I think it wise to emphasize the undesirability of killing bats, even to get them out of a house. I feel more and more certain that bats are at least as beneficial as the best of our insectivorous birds.

Berkeley. J. GRINNELL.

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This is an artesian flow on the farm of A. H. Coates at Dairyland. To stop unnecessary flow he has erected 17 feet of casing above the ground. The supply is regulated by a stop-valve.

This picture shows the volume of water that the well delivers—over 500,000 gallons a day.

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10 years to pay---let the crops do it.

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Balancing Alfalfa Ration.

[Written for the PACIFIC RURAL PRESS.]

Barley, which has heretofore been of little importance as a dairy feed is rapidly gaining favor, perhaps more especially this year when prices have been lower than usual; for it may be grown successfully on most ranches and furnishes an excellent carbohydrate balance to the protein of the usual alfalfa dairy ration.

Regarding the advisabilty of feeding barley to dairy cattle, an interesting test has recently been made at the University Farm at Davis, where a Holstein cow has been fed a ration of 10 pounds of crushed barley, with from 30 to 46 pounds of alfalfa hay, and 10 to 17 pounds of green alfalfa. This cow is a mature animal, having freshened about the first of June, since which time she has produced from 1½ to 2 pounds of fat daily.

Last year this same cow, when receiving a ration of ground oats, dried beet pulp and a small amount of barley, cocoanut and oil cake meals, in connection with alfalfa, gave a trifle more than one pound of fat daily.

While the condition of the cow before freshening may have influenced the increased flow somewhat this year, it is pointed out that the results from a production standpoint have been equally as good as those of last, and that contrary to general opinion, barley does not dry up dairy cattle.

A cow that is worth feeding at all is worth feeding well, is the motto of most successful dairymen, and one well worthy the consideration of all dairymen, for it has been demonstrated many times that in high production the quality and quantity of the feed have been closely related to the quality of the animals being fed.

Authorities on the subject of feeds and feeding point out that few places in the world furnish such ideal conditions for the proper balancing of dairy cow rations as the irrigated areas of this State. These assertions are based on the fundamental principles of dairy cattle feeding, which are in brief feeds that will make a balanced ration, which may be economically grown on the dairy farm.

Along this line F. W. Woll, who has had much experience in eastern and middle western localities, states that in his opinion the balancing of a ration with domestic grown feeds is less complicated here than anywhere else he knows of in this country.

As an example he points out that while protein, which is a very important part of the dairy cow ration, often has to be purchased in other sections, in concentrated form, whereas here it is furnished in wonderful quantities by our alfalfa.

Using that as a base, we also have corn silage, barley and beets, all of which may be grown by most farmers, or at least purchased at sufficiently low prices to warrant their more general use.

With these feeds he believes that most other feeds may be eliminated to a large extent by the alfalfa dairymen, such as oats, corn meal, cotton seed meal, or other concentrates which enter into the eastern dairyman's ration to a considerable degree.

Among others who have used barley successfully during the past year, is the firm of A. W. Morris and Sons, who have used a ration composed of 8 pounds barley, 4 pounds bran, 40 pounds of silage, 35 pounds of alfalfa hay and about 7 pounds of dried beet pulp. As this ration was being fed to registered Holsteins of high producing powers, many of whom were on official test, the amounts are much larger than the ordinary grade cow could be made to consume, but the same proportions should hold for the grade dairyman when balancing an economical ration.

Calves Need Balanced Rations, Too.

It will be noted that the bulk of this ration can be produced on most California farms, in fact that is a consideration which Mr. Morris believes dairymen should more generally adhere to.

Alfalfa and silage naturally compose the greatest part of the above ration, and while they are superior to alfalfa alone, other more concentrated feeds are required in balancing the ration and for this purpose dried beet pulp and barley were considered the most economical.

Mr. Morris states that in his opinion dairymen generally will find alfalfa, corn silage, barley and beets the most profitable feeds to use with dairy cows and points out that all of them may be grown by the dairymen himself.

N. H. Locke, of Lockeford, states that he will not show such a large herd of Jerseys at this year's fairs as he did last year, he having entered 24 head for the State Fair. He says he will make the Nevada and Arizona State fairs this year, and may possibly show at the different county fairs.

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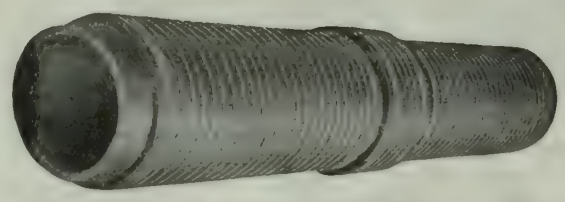
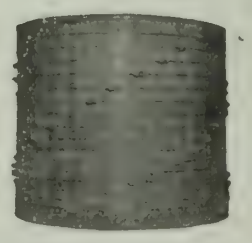
PIPE



Machine Banded or Continuous Stave. In diameters from 2 inches to 12 feet. For irrigation or water transmission. Cheaper than metal pipe—lasts longer.

TANKS



Built to order to suit your needs. Any dimensions—with towers or without. Will not rust like metal tanks. Guaranteed — dependable — everlasting.

SILOS

Similar to those we have erected for A. W. Foster; Mrs. Phoebe A. Hearst; J. F. Dunne; J. Lansing Lane; University Farm; Sheldon Ranch; Rancho Dos Rios; Huston Farms and other California ranch owners.
Designed and built by experts especially for California conditions.

Our PIPE, TANKS AND SILOS are made from clear, air dried Redwood

See Our Exhibit at the State Fair, Sacramento, and write us for prices.

Redwood Manufacturers Co.
Fully Paid Capital, $1,000,000.00
808 KOHL BUILDING, SAN FRANCISCO

AT THE FAIR THIS YEAR

WHEN the inviting shade of the big SHARPLES tent beckons you inside, slip into the welcome arm of a big, comfy chair in a cool corner — and while you rest your tired feet, watch the SHARPLES MILKER milk your neighbor's cows.

Smoke if you want to—the ladies don't mind. Relax and get all the good out of your little recreation trip. Feel that this big exhibit is your show—because we have gone to a lot of trouble to make these exhibits both interesting and instructive —but, after all, comfort is the thing which intensifies all our pleasures.

If you are interested in dairying—and everyone is nowadays —here you will find food for thought. Cows strange to the machine will be milked at regular intervals. Here you will learn, in a few minutes, why the SHARPLES MILKER is now milking a quarter million cows. You can see the reason for its remarkable success instantly. Better still, you can talk with farmers and dealers who have shared in the upbuilding of that success—undisturbed.

The things a man finds out for himself are the ones most worth while to him. People learn—they are not taught nowadays. Farmers have a way of doing their own thinking. And if an article does not possess merit you cannot make them believe that it does. And, on the other hand, if it does possess that merit, you can't keep them from finding it out. We investigate and "buy" things in this progressive age. Farm implements are no longer "sold."

Every member of the family is interested in the MILKER, it seems. And it is right that they should be; because if a man can use a MILKER and it will do him good, the sooner he knows about it the better. We cannot put off the inevitable —and why, then, should we try? If a man can't use a MILKER it won't hurt him to know about it, because it is a big new idea. But if he can use it, now or any time, why deny himself so good an opportunity of seeing it?

Clarifiers will be shown, too, and gasoline engines. And Separators, Whey Machines, and much else which interests the dairy fraternity.

Something Happens Every Minute at the Sharples Milker Show. It's really interesting! You will be delighted with your visit—and so will we.

FAIRS AND EXPOSITIONS---1914

Name	Location	Date
California State Fair	Sacramento, Cal.	Sept. 12-19.
Connecticut State Fair	Hartford, Conn	Sept. 7-11.
Illinois State Fair	Springfield, Ill.	Sept. 18-26.
Indiana State Fair	Indianapolis, Ind.	Sept. 7-11.
Iowa State Fair and Exposition	Des Moines, Ia.	Aug. 26-Sept. 3.
Kansas State Fair	Hutchinson, Kans.	Sept. 12-19.
Michigan State Fair	Detroit, Mich.	Sept. 7-18.
Minnesota State Fair and Exposition	Hamline, Minn.	Sept. 7-12.
Missouri State Fair	Sedalia, Mo.	Sept. 26-Oct. 2.
Nebraska State Fair	Lincoln, Nebr.	Sept. 7-11.
New York State Fair	Syracuse, N. Y.	Aug. 31-Sept. 5.
Ohio State Fair	Columbus, O.	Aug. 31-Sept. 4.
Oregon State Fair	Salem, Ore.	Sept. 28-Oct. 3.
The Allentown Fair	Allentown, Pa.	Sept. 22-25.
Tennessee State Fair	Nashville, Tenn.	Sept. 21-26.
Utah State Fair	Salt Lake City, Utah	Oct. 5-10.
Vermont State Fair	White River Junction, Vt.	Sept. 15-18.
Virgina State Fair	Richmond, Va.	Oct. 5-10.
Wisconsin State Fair	Milwaukee, Wis.	Sept. 14-18.
Interstate Live Stock Fair	Sioux City, Ia.	Sept. 21-26.
New Jersey-Penna. Interstate Fair	Trenton, N. J.	Sept. 28-Oct. 2.
Spokane Interstate Fair	Spokane, Wash.	Sept. 12-20.
Pacific International Live Stock	Portland, Ore.	Dec. 7-12.
Dairy Cattle Congress	Waterloo, Ia.	Oct. 12-18.
National Dairy Show	Chicago, Ill.	Oct. 22-31.
Maine State Fair	Waterville, Me.	Sept. 1-4.
New Hampshire State Fair	Salem, N. H.	Sept. 1-5.
Rochester Industrial Exposition	Rochester, N. H.	Sept. 7-19.
Maryland Interstate Fair	Hagerstown, Md.	Oct. 13-16.

THE SHARPLES SEPARATOR CO., West Chester, Pa.

Chicago Dallas Minneapoli Kansas City Omaha San Francisco Portland, Ore. Winnipeg Toronto

AGENCIES EVERYWHERE

Hog Cholera: Its Cure and Prevention.

[Written for the PACIFIC RURAL PRESS.]

Although years of work have been expended in its eradication, or at least its control, hog cholera in California is considered the greatest menace to present day pork production.

The total number of hogs in the State at this time is less than it was 25 years ago, even though we now have superior advantages for production and greatly increased markets. This is directly attributed to cholera by authorites on the subject, who maintain that before any vast increase can be possible, farmers generally must have a better understanding of the disease and the causes leading up to its spread.

In the first place it is pointed out that healthy hogs are less liable to contract the disease. By healthy is meant vigorous and growthy hogs gained by good and plenteous feeding, good clean drinking water, clean pens and wallows, and animals free from worms and lice.

These principles are the ones generally followed by large commercial raisers, who it might be mentioned report fewer losses through cholera than any other class, so it is evident that they are entirely practicable from a financial standpoint.

Taken up singly, we find that the most profitable gains in weight are those secured during the first few months of the hog's life and many growers deem it inadvisable to carry a hog for more than nine months, and prefer to have them in marketable condition before that time. To secure sufficient weight in that time, the ordinary grade animal must, therefore, be kept in thrifty and growthy condition.

The other considerations, viz.: clean drinking water, clean pens and wallows, and animals free from lice and worms, all have a great deal to do with the vigor and rapid growth desired and there are many instances in this state where no other precautions against disease have been taken and where no cholera has ever been experienced.

Unless one be in an isolated locality, however, there is always danger of cholera through several sources, namely: through streams or irrigating ditches, which carry the germs from infected herds higher up; through the introduction of infected hogs by purchasing from herds which do not show cholera in its chronic form yet which are still capable of infecting susceptible animals; through infected cars or wagons or by coming in contact with tools or implements used on infected farms.

Often the disease is carried by birds, buzzards being a striking example, as they eat of the dead carcasses. Then, too, the disease may be carried on the shoes of men who have previously visited infected farms.

Unless carried in the above or similar ways, there is no chance of infection, for the germs do not spread in the air as many suppose. This has been demonstrated where hogs on the same ranch, but in other pens nearby, have kept healthy while others have died in large numbers.

While the germs are too small for even microscopic detection, there are symptoms which warn the grower to take immediate steps. Among these symptoms are gummy eyes, either scours or constipation, gaunted appearance, little or no appetite, and weak or wobbly hind quarters.

At this stage the only hope of recovery is through the anti-hog cholera serum, and immediate steps should be taken to secure both serum and an experienced veterinarian, for unless properly injected the results will not be satisfactory. In fact, it is at this critical stage that so many fall down and afterward declare the serum of no account.

The serum may be secured from the veterinary division of the University of California at Berkeley either by letter or telegram, the latter method being preferable when immediately required. If no veterinarian can be secured, the University endeavors to send one when possible.

Authorities claim that the greatest losses from the disease are experienced after the affected hogs are cured through improper disinfection of the premises and shallow burial of dead animals.

As before mentioned, these germs are so small that it is impossible to detect them until the effects are noticed in the hogs. It is, therefore, essential that all buildings, fences, and pens, in which sick hogs have been kept, should be thoroughly disinfected before more healthy ones are put in. Such pens not disinfected often cause a spreading of the disease to neighboring herds through any of the before mentioned methods of distribution.

The deep burial of dead animals is also an important consideration for above named reasons.

State Veterinarian Keane states that in his opinion there are many outbreaks of cholera traceable to the over estimated worth of vaccination. While a strong advocate of the serum, he believes that much of the cholera could be apprehended by better management both before and after cholera infects a district, and with that end in view he has organized two hog growers' associations in the State, whose chief object is protection against cholera. This will be brought about largely by educating the farmer to better and more scientific handling of swine, and should result in improved pork production conditions.

PUREBRED SALES.

J. F. Gish of Laws, Inyo county, to Sterling Milk Co., Corona, 1 boar; to J. W. Newton, Bishop, 1 boar; to J. F. Pearson, Bishop, 1 boar and 3 sows; to U. Yamazaka, Bishop, 1 boar and 2 sows; to Martin Rogers, Laws, one sow.

N. H. Locke of Lockeford to Avery and Schill, Biggs, Gov. Fox of L 115741, Champ Flying Fox, Boullo's Golden Laddie, and St. Lambert Hood; to Jas. E. Thorp, Stockton, the Imp of L 107508 whose sire is King's Valet Imp and dam Derry Circassian Imp.

R. F. Guerin of Visalia to T. Settlemire, Porterville, The Raven of Sunnyside 3rd.

BLACK HAWK Stock Ranch

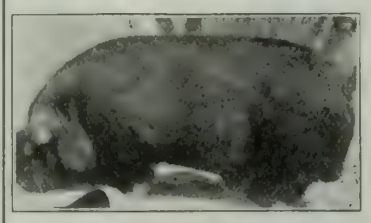
ANSWEK ARTHUR
Age 5 years. Weight 2150 lbs.

For Sale—SHIRE STALLIONS, ranging from two years up. Also MARES in foal. Breeding and quality unsurpassed. Prices right and inspection invited. Correspondence given prompt attention.

See our Horses at the State Fair

Address: HARRY CLARK, Burlingame, Cal., or
Dr. J. B. DALZIEL, 530 Fulton St., San Francisco

REGISTERED
POLAND CHINAS



HERD BOAR—YOUNG'S WONDER

Royal Orient and Chief Price blood. Young Stock for sale. Guaranteed as represented or money back.

Will Show at State Fair

FAIRVIEW STOCK FARM
W. A. YOUNG, Prop. LODI, CAL.

Bernstein's Ranch

POLAND CHINA HOGS

See our herd at Sacramento Fair.

A Few Good Ones for Sale.

W. BERNSTEIN
Kings County Hanford, Cal.

POLAND-CHINA HOGS
THE BROWNING STOCK FARM
LARGE TYPE
YOUNG STOCK FOR SALE. BOTH SEXES.
W. H. Browning, Prop. Woodland, Cal.

Good Kaffir Corn.

[Written for the PACIFIC RURAL PRESS.]

San Joaquin valley grows a great deal of Kaffir and Egyptian corn, most of which at this season looks ragged, curled up, and thirsty, besides having more or less uneven stand and growth.

After seeing many such fields, it was refreshing a few days ago to see the little two-acre patch of Kaffir corn belonging to F. H. Butler of Tulare.

It was beautifully headed on silvery dark green stalks five feet tall and as thick as it could grow well. The big compact heads will thresh out 20 to 25 sacks of grain per acre this fall, according to Mr. Butler, who has been growing it in a much larger way for many years.

It is fine feed for horses, hogs, and chickens, either threshed or in the head, being less heating but about as nutritious as Indian corn. If fed in the head, the kernel coverings make plenty of chewing necessary; if threshed, much of it passes through the animal whole. To prevent this waste, it is cracked or crushed and fed with barley.

This rather heavy loam soil was in alfalfa last year. Mr. Butler plowed it 6 or 7 inches deep in the winter, harrowed, and planted it to barley which yielded about 10 tons of hay this spring. Then the field was well irrigated from a gasoline-run pump, and plowed again. When it had been harrowed, the Kaffir corn was drilled about June in rows 42 inches apart, with a corn planter. When it was 4 or 5 inches tall the piece was harrowed thoroughly, regardless of the corn. At a foot high it was cultivated once and the big weeds were hoed out. No more irrigation or cultivation was given, but the top soil is fine and loose at this writing.

An important feature in producing this big crop is that the stalks are rigorously thinned out to two or three in each hill about 16 inches apart. If allowed to stand too thick the stalks grow tall and produce small heads. For grain, it should grow short and spend the extra energy producing the kernels low enough down so the stalk can hold up the heavy heads.

The heads are allowed to dry on the stalk, after which it is cut off with pruning shears and piled up until the threshing machine comes. Five or six years ago Mr. Butler piled up enough heads to thresh out 500 or 600 sacks without damage, but could not do this if they were cut green. Cows eat the stalks down after the heads are cut off.

KILLING JOHNSON GRASS.

To the Editor: Please tell me how we can best check or eradicate Johnson grass, which is securing a small foothold on the banks of our irrigation ditches.—S. H. C., Marysville.

(Johnson grass does not thrive well in the shade. Olive trees planted along the banks would be a good solution. But the best solution is sheep. The weed spreads by underground stems as well as by seed. Preventing seed would be easy; but starving and exhausting the underground stems is a matter of letting the tops grow just enough to draw on the roots without returning enough nourishment to them so they can grow or even hold their own. Close grazing by sheep is the cheaptst and simplest way to do this.—Editor.)

CALF FOOD.

"In Iowa we used to think we couldn't afford whole milk for the calves, and I raised all my dairy calves for several years on a mighty fine calf-food mixture whose economy depends on the local price of the material as well as the price of milk," says H. N. Woodward of Los Molinos, Tehama county. "I weighed out equal parts of old process oil meal and wheat shorts, stirred it into warm water to make a smooth gruel, and used a pint of the mixture per gallon of water."

WHY SEE THE STATE FAIR?

(Continued from page 221.)

I. B. and J. E. Thorp, Stockton.

Holsteins:
J. K. Fraser, Denair.
Jas. McGillivray, Sacramento, 21 cattle.
Stanford Vina Ranch, Vina.
Frank Hatch, Ceres.
J. A. Pelanda, Salida.
Laura J. Frakes and Bros., Sutter Creek.
A. W. Morris and Sons, Woodland, 50 cattle.

Percherons:
Ruby and Bowers, Davis.
E. Miller, Stockton.
Wm. Bond, Newark.
M. Bassett, Hanford.
Dunham-McLaughlin, Oakland.
Gould & Franklin, Roseville.
C. A. Penniger, Stockton.

Shires:
E. W. Westgate, Rio Vista.
McCormick Bros., Rio Vista.

Clydesdales:
O. H. Brandt, Shellville.

Jacks and Mules:
M. A. Merrill, Williams.
A. R. Greive, Davis.
Dill Bros., Clements.
Dan Emmett Jr., Ventura.
J. P. and W. N. Yost, Fair Oaks.
W. J. Grier, Edenvale.
A. W. Blevins, Williams.
Eaton & Hughes, Santa Rosa.
Frank Hart, Coulterville.

Berkshires:
Woodland High School Agricultural Club.
A. M. Humphreys, Mayhews.
Oak Grove Dairy Farm, Woodland.
Harry Murphy, Perkins.
George Murphy, Perkins.
H. G. Armstrong, Woodland.

Poland Chinas:
Woodland High School Agricultural Club.
S. F. Williams, Chico.
M. Bassett and Son, Hanford.
A. M. Henry, Farmington.
W. A. Young, Lodi.
W. F. Bernstein, Hanford.

Duroc-Jerseys:
J. K. Fraser, Denair.
E. E. Johnson, Turlock.
J. P. Daggs, Modesto.

Chester Whites:
C. B. Cunningham, Mills.

Shropshires:
Bishop Bros., San Ramon.
Thornton Glide, Davis.

Others who we know will show are Henry Wheatley, Napa, Shire horses, and J. L. Gish, Laws, Berkshires.

Miscellaneous:
University of California, all kinds of stock.
Frank Miller, Woodland, swine.
J. B. Archer, Woodland, swine.

The folowing High School students will exhibit swine: R. W. Beckman, Lodi; Frank Nisson, Esparto; David Snyder, Madison; Paul Stevens, Madison; Leslie Masion, Madison; R. F. Fraser, Denair.

Gombault's Caustic Balsam

The Worlds Greatest and Surest Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

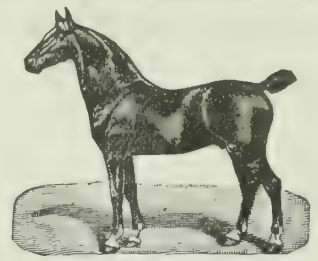
Supersedes All Cautery or Firing. Invaluable as a CURE for
FOUNDER,
WIND PUFFS,
THRUSH,
DIPHTHERIA,
SKIN DISEASES,
RINGBONE,
PINK EYE,
SWEENY,
BONY TUMORS,
LAMENESS FROM SPAVIN,
QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
PARASITES.
REMOVES
BUNCHES or BLEMISHES,
SPLINTS,
CAPPED HOCK,
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard VETERINANY REMEDY

Always Reliable. Sure in Results.



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Sole Proprietors & Distributors for the U.S. & CANADA. CLEVELAND, O.

NOTHING BUT GOOD RESULTS.
Have used GOMBAULT'S CAUSTIC BALSAM for more than 20 years. It is the best blister I have ever tried. I have used it in hundreds of cases with best results. It is perfectly safe for the most inexperienced person to use. This is the largest breeding establishment of trotting horses in the world, and use your blister often.—W. H. RAYMOND, Prop. Belmont Park Stock Farm, Belmont Park, Mont.

USED 10 YEARS SUCCESSFULLY.
I have used GOMBAULT'S CAUSTIC BALSAM for ten years; have been very successful in curing curb, ringbone, capped hock and knee, bad ankles, rheumatism, and almost every cause of lameness in horses. Have a stable of forty head, mostly track and speedway horses, and certainly can recommend it.—C. C. CRAMER, Training Stables, 990 Jennings Street, New York City.

Sole Agents for the United States and Canada.
The Lawrence-Williams Co.
TORONTO, ONT. CLEVELAND, OHIO.

Ohio Improved Chester

Entire herd immunized by the double treatment against Cholera. First immunized herd in the state. Have just imported two very fine young boars of best blood lines, Woodview Earl, sired by Norval, and Urie King, sired by Urie Boy, Dam Urie Katherine.

Have eight sows due to farrow in October. These are selected on account of their size, productiveness and all-around good qualities. I advise reservation orders for pigs be placed early. See me at the State Fair.

C. B. CUNNINGHAM
MILLS, SACRAMENTO CO., CAL.

Model Herd of Berkshires

NORA'S BEAUTY 3rd (164083)
Farrowed May 8, 1910.
Sire King Louis 6th (123288)
Dam Nora B 497th (130910)

We have three of these sisters, all weighing from 525 to 550 lbs. and all very much the same build. Their last litters farrowed from 10 to 14 pigs. These are the kind of pigs we are offering for sale at $25 for one, $45 for two, and $60 for three.

See our Stock at the State Fair

J. L. GISH, Laws, Cal.

A COMING HOLSTEIN-FRIESIAN SALE.

To the Editor: The first consignment sale of Holstein-Friesian cattle by the breeders of California, to be held at Hanford, October 28, will comprise unquestionably the best lot of stock ever offered to the public in the west, both as to breeding and as to individuality. The consignors are among the largest and best breeders of the Pacific Coast and realizing that upon the quality of the stock offered depends the success of this sale they are making sacrifices and selling animals which money would not induce them to part with at private sale.

A large number of A. R. O. cows will be offered and grandsons and granddaughters of some of the most famous sires of the breed, to-wit: Pontiac Korndyke, sire of 11 30 lb. daughters; King of the Pontiacs, the youngest sire of the breed to have over 100 A. R. O. daughters, including the world's champion 44 lb. cow and the only heifer to make 1000 lbs. of butter in one year; Sarcastic Lad, grand champion bull of the St. Louis Fair; Homestead Jr. De Kol, sire of five 30 lb. daughters; Ignaro De Kol, sire of seven daughters averaging over 20,000 lbs. of milk in one year; Paul Beets De Kol, the greatest sire of his day; Alcartra Polkadot Corrector, sire of the famous Tilly Alcartra, former World's Champion 3 year old; King Segis Pontiac, sire of the $50,000 bull, Hungerveld De Kol, considered by many the greatest sire the breed has ever produced; Pontiac Hengerveld Parthenea, the best son of this great sire and sire of the World's Champion 36 lb. 4 year old; and other great sires whose daughters and sons have taken a prominent part in bringing the Holstein Friesian breed to its present pre-eminent position.

Sons of some of the greatest herd sires in the west and out of cows with large official records will be offered at this sale. Bulls fit to head any herd in the world. Many of the cows in this sale will be bred to such great sires as King of the Pontiacs, Pontiac Hengerveld Parthenea, King Segis Pontiac, Beauty Pietertje Prince, and worthy of special note to a son of that queen of dairy cows, Riverside Sadie De Kol Burke, champion milk cow of the world from 7 days to 6 months and also for 2 years. A truly great lot of offerings!

The breeders who are consigning this stock will guarantee them to be sold as represented and they will be absolutely sold to the highest bidders. Buyers may bid with confidence and feel assured that the stock they take home with them from this sale will be the result of years of breeding along the best blood lines and of the most careful selection. They are foundation animals and those looking for foundation should not fail to attend this sale.

Harold Armstrong, manager of the Oak Grove Dairy herd of Berkshire, returned to Woodland last week from the East with a carload of registered Berkshires. Numbered among the shipment were many females which will aid in enlarging the herd to such proportions that Mr. Armstrong can better supply his growing trade.

WITH THE LIVE STOCK MEN.

In a letter to this office R. L. Waltz, of Hanford, states that he has recently sold to C. L. White, of Porterville, the Jersey bull Otto Hess 118136, and to H. Crabtree, of Stratford, the bull Bachelor of Enterprise.

J. M. Bomberger, of Modesto, has recently shipped 24 head of Berkshire hogs to Chowchilla, Madera county, where they will be distributed by the Farmers' Association of Chowchilla, among the farmers of that district.

A shipment comprising 34 carloads of sheep has recently been sent from Chico to San Francisco. This is one of the largest shipments ever made from that section. Haile and Waltz, ranchers of that place, made the first shipment.

The Poland China division will be added to this year at the State Fair by the W. F. Bernstein herd from Hanford. Mr. Bernstein has expended a considerable amount of energy and money in building this herd up and should be among the winners in his division.

According to a large cold storage operator in this State, the Australian shipments of meat to this country will be materially reduced on account of the heavy demands England is now making upon their supplies. He gives this as his reason for believing that beef in this country will be in bigger demand than ever.

Without doubt the livestock exhibits at the coming State Fair will exceed all previous records. The greatest increase in entries have been in the beef and dairy cattle divisions, although swine and mules have made almost as large increases. It now seems evident that the present buildings are inadequate for the proper housing of the livestock entries and larger fair appropriations are undoubtedly badly needed.

The consignment sale of registered Holsteins which is to be held at Hanford, during October, is certainly a step in the right direction by members of the California Holstein-Friesian Breeders' Associaton, who state that they are consigning as good stock as can be obtained, and as all of them are home breeders whose reputations are beyond reproach, the sale will undoubtedly be well attended and patronized, as it should be.

The Cooley Bros.' sale of grade dairy cattle, held at Durham last month, as advertised in these columns, was entirely successful, a large crowd of prospective buyers being present from all parts of the State. The average prices were: 7-year-old cows, $106.35; 3-year-olds, $109; 2-year-olds, $107.65, and one-year-olds, $42.75. Calves averaged $37.25. Mr. Ed. Boyenton, of Lincoln, Placer county, was the heaviest buyer, he having purchased for a foundation herd.

CALIFORNIA BREEDERS FIRST CONSIGNMENT SALE

100 REGISTERED HOLSTEINS 100

HANFORD, October 28, 1914

Consignors:

A. W. MORRIS & SONS ..... Woodland
McALISTER & SON ..... Chino
R. F. GUERIN ..... Visaila
G. A. HEWITT ..... Hardwick
T. J. GILKERSON ..... Stratford

All Stock Tuberculin Tested.
Catalogs ready about October 10th. Write for one.

JAMES W. McALISTER, Jr., Sales Manager, Chino.
Col. BEN A. RHOADES, of Los Angeles, Auctioneer.

Watch next issue for descriptive ad.

Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

DAIRY CATTLE

ROYAL JERSEY HERD—Offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers & Merchants' National Bank.

THIRTY-FIVE head of good grade dairy cows for sale by Dr. A. Schapp, Esparto, Yolo Co., Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warder herd bulls, both sired by $17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal. —High-class thorough-bred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEY BULL for sale; ready for service. H. M. Barngrover, San Jose, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS—Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

HOPLAND STOCK FARM — Registered Short-Horns. Prices on application. Hopland, Cal.

REG. HOLSTEINS — Bull calves. Julian-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Shorthorns, milk strain. Petaluma, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

HORSES AND MULES

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

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SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Runlap, Manager, Newman, Cal.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

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J. R. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

REGISTERED POLAND-CHINA HOGS—Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows, and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

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REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

BERKSHIRES—Utility and choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

YOUNG REGISTERED BERKSHIRES—Boars and sows. Reasonable prices. Enterprise Farm, F. C. Cuthill, Newark, Cal.

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DUROCS from first-prize winners State Fair, $15.00 up. Ed. E. Johnson, Turlock, Cal.

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REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

DUROC-JERSEY BOARS—Weanlings. Lindquist Bros., Turlock, Cal.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND CHINA HOGS—C. A. Stowe, Stockton, Cal.

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W. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure bred Holstein cattle. Los Banos, Cal.

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S. B. WRIGHT, Santa Rosa.—Registered Berkshire hogs and Jersey cattle.

War Demand for Horses.

[Written for the PACIFIC RURAL PRESS.]

What will the war bring to California horsemen in the way of prosperity? is a subject that is being talked of pro and con by most everyone in the horse business, from stallion owner to market buyer.

In the past there has never been any well defined breed of army horse in this country, the bulk of such horses having been what we might term misfits for other purposes. That is, they were horses of promiscuous breeding, having a little of every blood mixed up in their breeding. Some were of trotting blood parentage while many were the result of improper draft crossing.

In a brief way and according to the present specifications of the U. S. government there are five classes of horses and two of mules: the mature cavalry and saddle horse for mountain artillery which must be a gelding of specified color, in good condition, from 5 to 8 years old at time of purchase; weighing from 950 to 1,100 pounds, depending upon his height, and be from 15 to 15¾ hands high. The artillery horse for light and horse batteries, which should be a gelding from 15½ to 16 hands high, weighing from 1,150 to 1,250 pounds and having the other above mentioned conformation, except that the neck and shoulders of the artillery horse should be somewhat more heavily muscled than the cavalry animal. This horse is required for draft purposes and should be heavy enough to move the load ordinarily, by weight thrown into collar, rather than by muscular exertion. Artillery horses for light siege batteries may be a mare or gelding conforming to the above specifications except that the animal should be from 16 to 17 hands high and weigh from 1350 to 1650 pounds. Medium draft horses may be mares or geldings from 5 to 7 years old, weighing from 1200 to 1400 pounds and from 15½ to 16½ hands high. Light draft horses may be mares or geldings from 5 to 7 years old weighing from 1,100 to 1,200 pounds and should be from 15½ to 16 hands high. Young horses for artillery and other purposes are classified as follows: two-year-olds, —minimum height 14¾ hands, minimum weight 750 pounds; three-year-olds, — minimum height 15 hands, minimum weight 850 pounds; four-year-olds,—minimum height, 15 hands, minimum weight 900 pounds.

It will be noticed in this classification that no reference is made to heavier than 1650 pounds and that the majority weigh around 1200 pounds.

So far as California is concerned in the present situation, the only effect which may materialize seems to be that our own government may purchase here more liberally for their own use on account of a possible decreased supply in eastern and middle western states. Regarding the influence on the draft-horse markets in this State, James McNab is of the opinion that conditions will not be influenced, as he points out that the proper place for the real drafter is in the city, for heavy hauling purposes, and he sees no reason to suppose that the demand for this class of stock will be affected.

California Rambouillets

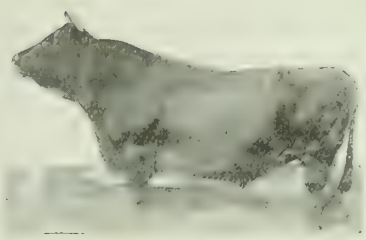
2400 one and two year old rams and some good ewes for sale. These sheep are pure bred, large and smooth, with heavy fleeces of fine, long, staple, white wool.

CHAS. A. KIMBLE
Breeder and Importer

Prices reasonable
Correspondence solicited

HANFORD, CAL.

The only chance of improving a herd is through the SIRE.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KINGS VALET (Improved) with a show record excelled by none, produces prize winners that are great producers; the average test being 6.4x for all heifers in milk.

BORELLOS GOLDEN LADDIE, also a show bull and producer; sthe average test of his heifers being 5.5x.

We have for sale very classy young bulls of their blood, bred right, raised right and handled right.

SEE THESE JERSEYS AT THE FAIRS OR ON THE RANCH, AND MAKE YOUR SELECTION.

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Salvador Stock Farm

Shire Stallions and Mares

Imported and Home Bred

In the last five years I have won more prizes at State Fairs than all other competitors combined.

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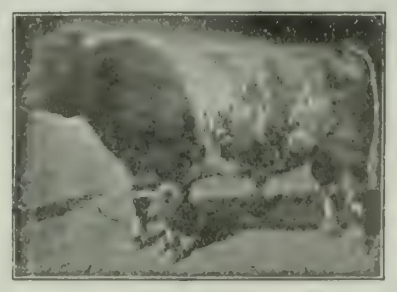

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Son of King Edward, Grand Champion Bull California State Fair 1909-1910-1911. The Only Bull a Three Times Grand Champion.
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The Famous Blacow-Roberts-Glide French Merinos and Pure-Bred Shropshire Rams

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Bapton Broadhooks, 3rd, 285,378
Greenwood Knight, 337,393
Knight Perfection, 299,568
King Lancaster, 299,837

HILLCREST LAD.
Champion Ram State Fair 1911.

Ram Lambs and Yearling Shorthorn Bulls for Sale

Conserving Range Feed.

[Written for the PACIFIC RURAL PRESS.]

With all forms of wild forage in abundance and feeder cattle almost impossible to secure, or at least suitable feeders, cattle men have been taxed to their utmost the past season in taking advantage of the favorable feed conditions.

It has only been in rare instances that a cattle man has been found who was able to take advantage of the situation, by having both cattle and feed, yet, to quote one of the most successful cattle raisers in the State, "there is never too much feed."

On the surface of the thing such a statement does not seem to coincide with the experiences this year, yet when it is analyzed, one finds that it is true in all respects, except perhaps with those farmers in some sections who grow both cattle and alfalfa hay, in which case it s hard to determine just what to do with the hay, unless more stock can be purchased.

In reality the overabundance of feed this year should be a great aid to the range situation in future years, for it will allow such lands an opportunity of regaining some of the fertility that has, in a large number of instances, been so badly depleted.

There is little doubt existing but that our western grazing lands have been stocked to the limit, and it is a common thing to hear cattle men tell of the few cattle run on the present day ranges as compares with the number of 20 or 30 years ago.

A successful grower along the coast section states that in his opinion the practice of carrying the largest number possible on a given amount of land, year after year, will eventually work such a hardship on the industry that farmers will be compelled to discontinue present day practices and give more attention to the conservation of feed and the more scientfic handling of cattle on the ranges.

The former owners of this land used little discretion in handling their cattle, running about one steer to six or seven acres. This practice, continued from year to year, cleaned the land of vegetation every year, and allowed the soil little chance of regaining fertilty, except from the offal of the cattle. When dry years struck them, there was little hope of supplying feed for even a limited number of cattle, the result being that each dry year meant the re-establishing of the herds.

Since purchasing the property, the present owner has pursued entirely different tactics, preferring to allow some feed each year to go to seed, and to aid in this practice by cutting down on the cattle carried to one head to 10 acres.

Inyo County Herefords.

At the start this method did not allow of turning off of nearly so many head a year, but there has been a gradual increase in the average of beef marketed each year, for those sold have invariably been in higher flesh and the same number are maintained every year, whether the season is favorable or not.

This man states that he figures every bit of feed which is not needed one year, goes that much farther in insuring him feed in the future, as it greatly aids in building up the soil that his predecessors cared so little about.

That every cattle raiser should prepare himself in years of plenty for the drought years which come at different intervals, is the opinon of T. S. Glide of Yolo county, who carries on an interesting system of insurance against dry years.

While a large portion of his holdings are on the low lands along the Sacramento river, his winter ranges are in the mountains back of Winters, Yolo county. These lands naturally furnish good feed, but it has been the practice for a long time to have a surplus of stacked hay on hand, to avoid any possible shortage in bad years. These stacks are sometimes kept for several years before there is any need for them, but in times of need they are worth a great deal more than the interest on money, so invested.

Along with this hay, which is mostly hauled to the ranges from lower lands, an experiment was tried with straw last year which has proven so profitable that more straw will be stacked each year from now on.

This straw, which was secured from a nearby grain grower, was hauled to the corrals and stacked, a heavy salt brine having been distributed over the straw as it was being stacked. This brine was made of salt and water, with enough salt to float a potato, the mixing being done in barrels. One man stayed on the stack all of the time wetting down each forkful of straw as it came from the wagons.

The value of this as feed was found last winter, when the cattle would leave the best of green feed to partake of the straw, and Mr. Glide states that they fattened well on it. This year straw from neighboring ranches is being hauled and stacked in the same manner, not entirely because it is relished by the cattle, although that of course has much to do with it, but because it is an insurance against any dry year that may come. It also conserves the wild feed, allowing the soil an opportunity of increasing its fertility, through the added humus and vegetable matter secured from the feed which the cattle do not consume.

After all, it is possible that the scarcity of feeders this year will in the end be beneficial, as it will create a surplus of fertility for future years.

Merits have Captivated Hershey's

July 28th, 1914.
Hinman Milking Machine Co.,
Gentlemen:

Since the purchase of the first outfit a year ago we have sold them **(Hershey Dairies of Milk Chocolate Fame)** seven outfits.

They are using other milkers on some of their farms purchased before we were in the business, but from the fact that they have bought no other kind since installing the first Hinman proves that its merits have captivated them.

Very truly yours,
Buckwalter Supply Co.

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RHOADES & RHOADES
EXPERT LIVE STOCK AUCTIONEERS

Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.

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Future Aspects of Mutton Sheep.

[Written for the PACIFIC RURAL PRESS.]

Men in close touch with California's sheep industry have predicted for several years that eventually a great many sheep would be grown on the smaller farms.

Has the time now come for this newer method? Such were questions asked of numerous parties interested, including range men, breeder, butcher and alfalfa farmer, and the answers were invariably "Yes." Not in a big way at first, you understand, for that would be a poor thing in the end; but the start will soon be observed.

As to the kind of sheep, the replies unanimously favored the mutton breeds. In fact some even went so far as to predict that the majority of our future lambs will come from these same small growers.

Just why a change seems inevitable is attributed to various causes; chief among them, of course, being the rapid development of large areas heretofore considered worthless for anything but sheep grazing lands.

In all parts of the big interior valleys this development may be noted. On the lower foothills, which have served as valuable winter sheep quarters for half a century, the fruit grower has gradually increased land values until the sheep man has in many cases abandoned the business entirely and sold his flocks.

On the lower lands we find reclamation projects rapidly transforming summer feeding quarters into valuable alfalfa ranches and a large breeder along the Sacramento river estimates a depreciation in his immediate vicinity of many thousand head during the past two years. Such material lessening of production in these lower sections means a big cut in mutton and lamb receipts at the markets, as these growers have been heavy producers of mutton for the San Francisco markets.

Due very largely to the uncertainty of the wool markets during the past two years and the relatively high price of lamb, many large raisers have been selling all of their lambs and breeding their high grade Merino ewes to mutton type bucks, and while this has proven highly profitable and will likely be continued in some localities where mutton production is feasible, the majority of these raisers now find themselves with an old bunch of ewes on their hands; but no young ewes. As this has been general, the price of breeding ewes is extremely high and they are scarce. One well informed buyer informs us that 75 per cent. of the ewes are being held by the farmers this year and that many of those reaching the markets are being resold to the country for breeding purposes.

With this condition confronting them and with more encouraging wool prices, range men are seeing the need of new blood and it is essential that this blood be Merino, for the crossing out of this blood into mutton cannot long be pursued on our ranges as it lessens hardihood and constitution, which are so essential in sheep raising under arid or semi-arid conditions, such as abound in many California sections.

Another very favorable factor to the smaller grower is the ever increasing scarcity of meat, not only in this country but in others as well, and the relative higher prices resulting therefrom.

Regarding this aspect of the industry, an address read at the last meeting of the California Wool Growers' Association, and later printed in these columns, ably demonstrated that while as yet mutton in this country sells on the average for less than beef or pork, it is a far more desirable food than either of the others and will in a short time assume equal importance as a food stuff.

Lastly, but of great importance, among reasons given is the economic need of sheep on the smaller farm. In this respect it is claimed that the value of a few sheep on the farm is more than simply that of meat and wool, due to their ability of living and flourishing on waste lands and badly infested weed areas. Aside from these, there is also the fertilization value to be derived.

Assuming that the reasons given were correct, an effort was made to learn the proper methods to pursue in establishing small flocks. While the crossing in of mutton breeds on Merino ewes may handicap the range man on account of the offspring from such crosses, if continued, being unable to withstand the rigors of the ranges, the opposite condition holds true on the small farm where succulent feeds predominate.

Such conditions are ideal for the mutton breeds, and it is in such localities that the biggest mutton pro-

Mutton Sheep Will Pay Small Growers.

6 lbs. More Butter Fat a Day in 6 Days' Time

—that's what F. T. Shaver of Holtville, Cal., says. Read his letter.

"I wish to send praises in regard to your dried beet pulp. I have fed it for three years, and am glad to state it is the best grain for a milk producer with a heavy butter fat test I have ever used. It saves hay and keeps the cows in good condition.

"As we do not have to feed pulp here through the summer, I commenced November 1, last year, and the cows produced six pounds more fat a day in six days' time. Thirty-two cows milked as high as 96 gallons of milk, or 29.8 pounds butter fat a day. Twenty head were old milkers. I feed the pulp wet."

Hundreds of other dairymen will also tell you of the wonderful value of Larrowe's Dried Beet Pulp as a milk producer and conditioner. It improves every ration; balances perfectly with alfalfa.

RICH IN NUTRIMENT — CLEAN — SUCCULENT

Larrowe's Dried Beet Pulp is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage with as great or greater succulence—swelling to fully six times its original bulk when moistened. It will not only increase the quantity and quality of milk, but keep the herd in better health with less bag trouble and greater contentment. Try it now. Go to your feed dealer today and buy one sack. Test it on one cow whose milk record you know and watch results.

LARROWE'S MOLASSES-DRIED Beet Pulp is preferred by many feeders on account of its sweetness. Just the plain beet pulp with beet molasses dried. Fine for fattening, also for horses.

Our booklet—"PROFITABLE FEEDING" gives valuable information and feeding instructions. Should be in the hands of every dairyman. Write for a copy—free.

THE LARROWE MILLING COMPANY
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See our exhibit of Shorthorns at the State Fair :: :: :: ::

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MODESTO KING
1st prize aged boar at 1913 State Fair

Put your low-priced barley into good hogs this fall

Have 85 suckling pigs to pick from now. Ten more sows to farrow soon. Will have 20 bred gilts, also service boars for sale after showing at State Fair in September. Hogs are scarce. Order now for fall delivery.

DUROC-JERSEY FARM
JNO. P. DAGGS, Prop., Modesto.

ducing countries are found. Butchers as well as mutton sheep breeders maintain that there is more profit in raising winter and early spring lambs than could possibly be made in wool production on the small farm.

As most of our native sheep are of Merino breeding, it will be necessary for the farmer to use such ewes for foundation purposes, gradually obtaining mutton types through the use of mutton rams.

The first cross of Shropshire bucks on high grade Merinos on A. W. Foster's Lakeville ranch in Mendocino county was highly profitable, the lambs selling in San Francisco for $4.50 a head.

T. S. Glide practices a system of crossing on his old Merino ewes that has paid him well for a number of years at his ranch near Davis, Yolo county. Ewes which are no longer fit for the range are bred in the fall to Shropshire bucks, the lambs being disposed of in the spring when the market is high. The ewes are then fattened and also sell for an etra good price at that time.

It may be said that the first cross on high grade French Merinos produces a good lamb, and that succeeding crosses still further improve them from a butcher's standpoint. Spanish Merinos do not do so well with the first cross, although the second and succeeding ones are satisfactory.

In order to reach the best lamb market, which dates from the middle of December to the middle of March, the ewes should be bred in the late summer or early fall. This necessitates some more expense in care and housing during the wet weather; but is amply repaid in the increased prices received.

With our moderate winters and vast areas of irrigated alfalfa, experienced growers claim that ours should be one of the finest lamb-raising sections in this country.

Proving the Heavy Layers.

[Written for the PACIFIC RURAL PRESS.]

There are quite a number of methods of selecting the laying hen that to an observing person are as good as though the hens were trap-nested. but the trap nest saves a person from exercising his observing powers and gives him no exercise for the physical. Of course the trap nest is reliable and if we want statements to put on record that is the way to get them. But the ordinary person has not time to trapnest a lot of fowls; it is a slow job, and to prove anything must extend over a length of time.

One of the best methods of increasing the productiveness of a flock is to select only the very best early layers. These should be banded and the number entered in a book set aside for that purpose. These early pullets should be bred from, and the pullets that come from these watched again for early layers. These early pullets will usually be found to lay a considerable number of eggs before the others start.

Another method of selecting and breeding a flock of winter layers is to hatch all eggs from hens that lay longest in the fall without molting. These pullets will invariably prove good winter layers.

In selecting layers from a flock, three things should be carefully considered: (1) The shape; (2) the comb, wattles, and face; (3) the actions of the hen.

The Shape.—No matter what breed it may be, the laying shape is a hen that is wide behind, legs well apart and having a long back. This gives great lung capacity, big digestive organs, and large egg bag. The crops of good layers will usually be found full at night because they need the food and will get it. The poor layers need only so much to keep up their bodily needs, and their crops will be found about half full. If the fingers are greased and inserted in the vent, the size of egg bags may be determined, those laying heavily will have large bags and the poor layers small ones.

The head of a good layer is distinctly feminine, that is, long and slender, after the manner of a good milch cow's head. The color of the face, comb and wattles in the laying hen is nearly always of a bright red, especially in pullets that are just commencing to lay. A pullet that has not commenced, but is about to commence laying will show a very bright red comb.

In hens or pullets that are about to lay the plumage usually gives a better and brighter luster; but those which have been laying heavily will have very dingy looking feathers, while the poor layers are much brighter in plumage. These things can all be observed best in a yard where there are both kinds of layers to choose from. A hen that has laid heavily all the season has had very little feed to spare for feathers and they get very rough and faded, while her sister that has only laid every other day or so, could put some of her time and substance into feathers and so looks much nicer.

Actions of the Hen.—Early laying is one of the best indications of a good layer. A hen that is going to lay will usually be found singing and chuckling to herself a good part of the time. And she is always alert, too, after the bits to be found, she is generally hunting and digging after something, her spirits are too high to let her lie around dull.

She should be in good condition, because neither a real fat hen nor a real lean hen can possibly be a good layer. You want the happy medium and these are the hens that will be active without being too nervous and restless. A hen that waddles like a duck when walking is not always a fat hen; if she is grasped by the abdomen and the seeming fat is hard, she is a good layer and that which appears to be fat is muscle.

A little observation will enable anyone to pick out the best layers in the yard. Drones never fight and rustle after their share of the feed; this is one of the surest tests there is. They are content with little; they spend their time pluming their feathers or basking in the sun or shade, but do not hunt around or dig. A good layer must eat and eat lots, and if it is to be found, she will find it at home or abroad if given her liberty. If shut in she will get a big

Oak Grove Berkshires

CHOLERA IMMUNE

See our Exhibit at the California State Fair

Let us show you that OAK GROVE BERKSHIRES are the best.

Our herd is Cholera immune, the only immune Berkshire herd in the state.

We have at present some 300 Berkshires and we know that we can supply what you want.

Five herd boars in use and they are second to none on the coast. Our sows are of equal merit.

Be sure to look us up at the State Fair

Oak Grove Dairy Farm

H. G. ARMSTRONG, Prop. WOODLAND, CAL.

DISPERSAL SALE

OF

35-- Registered Jerseys --35

Having leased my ranch for a long term of years, I offer my entire herd, comprising 20 cows, 11 heifers and 4 bulls, including Noble's Warder, an imported bull, grandson of Noble of Oaklands. If not sold at private sale, will be sold at auction at the Modesto Dairy Show in October.

See Some of Them at the Fair Grounds

FURTHER PARTICULARS ON APPLICATION

W. FISK

Davis, Yolo Co., Cal.

REGISTERED

POLAND-CHINA SWINE

PRIZE WINNERS

Finest Stock in the State from $30 Up

I have for sale a few very fine Young Boars sired by Gold Coin, Master Banker and Wonderful Victor. There is no better blood in the world. See my stock at the Fairs.

M. BASSETT, Breeder HANFORD, CAL.

50 COWS AVERAGE 717 POUNDS BUTTER

This is the average of the 50 cows that have completed yearly semi-official tests to date in our herd, and only 15 at mature age.

Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.

INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as $150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention.

A. W. MORRIS & SONS CORPORATION,

Holstein-Friesian Cattle Woodland, Cal.

share of all that is served to the flock. A big layer is a big eater. Nature made her so.

Fattening Turkeys for Market.

To make a sucess of fattening turkeys, it is better to have them all of one size and as near one age as possible. This can easily be done by sorting out the largest or first hatches of the season and putting them into separate yards.

Fix one or two good high poles for roosts before putting the birds in the yards and arrange the feed troughs so that you will have to annoy the turks as little as possible after they are put into fattening quarters.

Give them plenty of water but no food the first day, unless they get too restless; then a little grain may be fed.

The second day commence with a moist mash as follows: barley meal, wheat middlings and bran equal parts, add a little salt just to flavor it and feed only what the turkeys will eat up readily. At noon change ground barley for ground oats and feed as before. For the evening meal, cracked corn, all they will eat. By changing the ground feed every meal you not only give the turks a variety of food that is more appetizing than all one thing, but you are improving the juciness and quality in general, of the meat. After about a week of this diet they will get tired of it in spite of the change. Then boil up a big kettle of small potatoes, put in a handful of salt while cooking, and fat or grease of any kind that is on the premises. When the potatoes are soft, take a masher and mix in ground barley as you mash the potatoes. If cracklings can be gotten, boil a good lump, say ten or fifteen pounds, in the potatoes, and mix all together with the barley or ground oats, but not middlings. The latter is too sticky to use in boiling water. This can be fed to the turkeys as long as it lasts, for they rarely get tired of boiled potatoes. In fact, if potatoes are plentiful on the farm the whole course of fattening may be with this boiled mash, using barley and oats as the ground feed in turn. Any kind of vegetables that happen to be plentiful may be used, but nothing is quite so good a flesh former as potatoes. The corn lasts longer and that is why it is fed at night, so that the system is absorbing some food all the time. If the feed is all mixed cold it is better if it can be mixed a part of the time with sour milk.

We know many turkeys are fed on a corn diet solely, and they are fat, too, but an all-corn diet, while it fattens, does not give the meat any flavor and the breast meat is always dry. The ground oats and barley make juicy meat as well as fat meat. Give all the green feed the turkeys will eat, at least once a day, and twice is better. If there are no cracklings to be had, either beef scrap or tallow must be used the last two weeks of fattening. If milk is plentiful, the meat can be omitted, but tallow should be given during the last week, at the rate of a tablespoonful to each turkey once a day. A great deal depends on the grease, though it matters very little what kind it is, so that it is wholesome.

Turkeys fed on this plan will always insure a high price, and most farms have small potatoes that are fit for nothing but feeding. In shipping to market always put birds of one size in a coop, as nearly as possible; it often gets you a better price; besides, it is direct information to the commission man that you are not a novice in the shipping business, and he pays more attention to the shipment.

Put the address of the party to whom shipment is made, in plain view, also a return address of your own, so that your coop will come back. This is part of the deal, and all shippers should insist on their crates being returned. The farmer needs to be businesslike in his dealings with others, and demand his rights.—Mrs. S. Swaysgood.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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will help to keep them in good condition, saving loss and worry.
A healthy hen will molt quickly.
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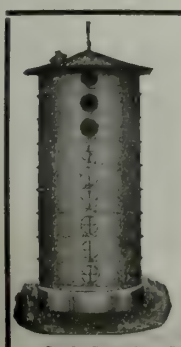

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Those patient, always willing-to-serve cows of yours must be treated kindly. When the help get up at odds with the world, they don't always handle the bovines gently, and you know what rough treatment does to a cow's teats, and how it cuts down her lactation period.

I'd like to show you how the teat cup with the upward squeeze gets on the job anytime, feeling "fit" and massages those teats as they should be massaged. It's but one of the many good features of the

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When we talk it over, you'll learn how it reduces the cost of milk, makes it clean, solves the hired help problem, and other important things. Write us for further information and literature. We are manufacturers and dealers in dairy supplies.

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HAVE FOR SALE:
3 fine young Guernsey Bulls, sired by Rieber's Glenwood, 11994
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Our BERKSHIRES are the finest in the State. At the last State Fair we entered in fourteen classes and won ten firsts.
Stock of all ages for sale.
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GRAPEWILD FARM,
A. B. Humphry, Owner
Mayhews, Cal.

The Home Circle

CHEESE AS AN ECONOMICAL FOOD.

While so much is being said and written about the high cost of foodstuffs, it is well to remember that the housekeeper who has the most knowledge of the materials with which she works and the most skill in applying her knowledge, is the one who can make the money at her disposal go the farthest.

The cheaper cuts of meat are as nutritious, and when well cooked, are as palatable, as the more expensive cuts. If she wishes to use something in place of meat, she has fish—fresh and cured—milk, eggs, beans, peas, and similar legumes, nuts if they are relished, and last, but very important from the standpoint of its food value, palatability, and the great number of ways in which it can be used—cheese.

The ways in which these substitutes for meat can be served are numerous and varied. Individual taste and food habits are to be considered, but, in general, it is true that the relish with which other dishes are accepted in place of meat depends upon the ingenuity and skill of the cook. It seems a foundation principle that as meat is a savory dish, any acceptable substitute for it must be savory or must be made so by suitable seasoning and proper cooking.

Those who whish to make substitutions of these foods for meat often desire to know how much of each is necessary in order to replace a given amount of meat. If we consider only the proteins of the meat, the following general statement may be made: 2½ quarts milk, 1½ pounds fresh lean fish, three-fourths pound dried fish, two-thirds pound ordinary cheese, somewhat less than a pound of mixed nut meats, 9 eggs, one-half pound shelled peanuts, or two-thirds pint dry beans, peas, cowpeas, or lentils is equal to a pound of beef of average composition.

It will be seen that two-thirds of a pound of cheese contains as large an amount of what laymen call "the muscle forming" materials, as one pound of beef of average composition. According to abundant analyses, cheese compares even more favorably with meat if its fuel value instead of its percentage of protein is taken into consideration, for one-half of a pound of ordinary cheese yields as much energy as a pound of beef of average composition.

If the housekeeper wishes to know how to make several sorts of Macaroni and Cheese, Boston Roast, Baked Eggs with Cheese, and a large number of other cheese dishes which are palatable as well as nutritious, she can find out by sending to the Secretary of Agriculture for a copy of Farmers' Bulletin 487, "Cheese and Its Economical Use in the Diet."

Taken as a whole, the bulletin makes out a good case for cheese. It should be helpful to those who for any reason wish to use cheese in greater quantities in their diet. Since it shows, on the basis of many experiments, that cheese is not to be regarded as a cause of physiological disturbance with the average healthy person, it should remove any prejudice which may have been entertained regarding the desirability of eating cheese in quantity.

PEACH DUMPLING.

Sift one pint of flour with one teaspoonful of baking powder, one-half teaspoonful of salt and one-half teaspoonful of sugar. Work into this two tablespoonfuls of lard. Mix with three-fourths of a cupful of very cold water. Have all the ingredients very cold, mix quickly and handle as little as possible. Roll out thin. Take the half of a preserved peach for the core of the dumpling. Cut the dough into pieces just large enough to wrap the halves of peaches, roll up and bake in a quick oven. Serve with a hard sauce flavored with syrup from the peaches or else with the good old-fashioned one of our grandmothers which always seems most apropriate to old-fashioned dumpling and flour puddings. Add one cupful of sugar to two cupfuls of water, boil and thicken with two tablespoonfuls of flour rubbed to a cream with a little cold water.

CARE OF THE EGG BEATER.

Never allow the handle and cog wheels of the egg beater to be put in the dish water, as this causes the grease to be washed off and ultimately ruins the efficiency of the beater. Wash the whipping blades as soon as used, dry and hang away at once to keep it in the best possible condition. Laying an egg beater away in a drawer with knives and other utensils is apt to bend the blades and cause them to catch when in use. It is far better to hang it by itself.

We often hear of the man who did his best and failed. All hot air. If he did the best he could he would not have failed.

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TEA & COFFEE at Wholesale Prices
60c Tea 45c | 40c Coffee 33c
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Any Flavor | Whole or Ground
2 lbs. Rex Tea 60c quality for 85c
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A FAIR GREEN UNCOLORED JAPAN TEA
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OF THE HIGHEST BLACK TEAS IN THE WORLD
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A CHOICE BLEND OF PURE COFFEE
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Rid your house of Bedbugs, Fleas, Cockroaches, Chicken Lice and all insects. Leaves no stain, odor or unsightly smell. Thousands of satisfied customers everywhere. One package enough to kill thousands of bugs. Parcels Post, in plain wrapper, 50c; 6 for $1.
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Eilers Bungalow Player Piano
THE MOST MODERN OF ALL PLAYER PIANOS
Sweet-Toned! Durable! Satisfying!
Small enough for a tiny apartment
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Appropriate for any mansion
The Latest! The Best!
Plays every note on the keyboard

Your "silent" piano taken in exchange
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Buys an Eilers Bungalow
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975 Market Street, San Francisco

THE HYGIENE OF SHOES.

The manufacturers are trying to teach the people how to acquire a beautiful yet attractively shod foot; that the things that constitute a beautiful foot are: Arched instep, straight toes, smooth skin, free from calluses, and a space between the great toe and the next one large enough to be quite perceptible, and even, uncrushed nails.

Shoes should be chosen according to the shape of the feet, so that the toes will not be crowded, and the space between the toes will be normal. Sensible shoes do not mean great ugly things that are unfeminine and unsightly, but shoes that fit, look neat, and meet the requirements of the daily occupation.

It is well to remember that shoes that are too large are quite as injurious as shoes too small. A shoe that fits snugly without crowding or cramping the toes or instep or inside muscles, and that has a moderately high heel, is the sensible shoe, and may be as dainty as desired.—Chicago Tribune.

To our reader who signs herself simply "Country Girl," and who wishes to know just what she will need in order to manicure her own nails, we would say:

You will require a nail file, cuticle knife, scissors, orangewood stick and a polisher, or two polishers if you want a very good polish. Also nail powder and cold cream. First, file the nails the desired shape, then soak the one hand in warm, soapy water for five minutes, next loosen the cuticle with the stick and the little knife, but use the back of the knife. Now trim the cuticle with the little curved scissors if it is very long, if short do not cut it. Rub finger with cold cream. When all have been gone over in this way use the polisher and nail powder, bathe and look over the hands to see if the polishing has rubbed up any little particles, if so, cut them off. Both hands must be treated alike. Lastly polish with the second polisher.

Don't pattern after other people. Be yourself. Individuality and originality are good qualities.

The Stephenson Patent Cooler

NO ICE REQUIRED
Perfect Ventilation
Absolutely Sanitary

Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.
L. ANDERSON CO., Mfrs., Martinez, Cal.,

WHY THE CANS BEND DURING PROCESSING.

To the Editor: We put up about a hundred or so of cans, fruit and vegetables, every season, and are successful in every way, except that almost every one of our cans gets bent as soon as they cool; some of them slightly, some very badly; very few stay full round. Our method is to fill the cans, pour in the sugar-water, and boil in the wash boiler; as quickly as possible after boiling, the cans are removed from the boiler and closed at once. We have found that the shorter time we let them boil, the less they will pull in after cooling down. The ones that are allowed to boil for a few minutes get bent in the worst. It is physically impossible, however, to take them out just at the right time. We wish to know if there is a way to prevent this denting.—Reader, Fresno.

Answer by J. P. Zavalla.

The trouble complained of by your correspondent arises in the exhausting process; the bending of the cans being due to the boiling water. The temperature of the water used for exhausting should be kept at 180 degrees F. or 190 degrees F. The length of time the cans should be exhausted varies from 3½ to 4½ minutes.

TO BAKE TOMATOES.

Take eight large ripe tomatoes, bread crumbs, pepper and sugar. Peel and slice them, mince pork very fine; put a layer of tomatoes in a buttered pie dish, season with sugar and pepper, strew with bread crumbs, and scatter a little pork over it. Fill the dish in this order, having crumbs at the top, cover closely, and bake for one-half hour, or till the juice bubbles up at the side. Remove the cover, brown and serve. If you do not care to use pork it can be omitted, but a little salt must be used.

RANK IN KENTUCKY.

"Yes sir," said the Kentuckian, as they sat by the stove, "you can tell a man's rank in this state thusly: If you see a man with his feet on top of the stove, he's a gineral; if his feet is on that rail about half way up, he's a colonel; and if he keeps them on the floor, he's a major."

"Ah, yes," said his companion, "that's good as far as it goes; but how are you going to distinguish a captain or lieutenant?"

"Stranger, we don't go no lower than major in Kentucky."

THE THANKSGIVING DINNER.

"Dat's an uncommon fine goose yo' got dere, brer Williams," he said to his host. "Where'd yo' git it?"

"Well now, Mistah Rawly," he answered with sudden dignity, "When yo' preaches a special fine sermon does I ask yo' where yo' done get it?"

NEURALGIA.

During the acute pain apply dry or moist heat over the painful area; the local use of chloroform liniment or ointment containing belladonna or camphor often brings relief. The application of an ice bag helps many

---

"Ma, do cows and bees go to heaven?"

"Mercy, child, what a question. Why?"

" 'Cause if they don't, the milk and honey the preacher said was up there must be all canned stuff.—Boston Transcript.

The Future Man or Woman

The food taken by the nursing mother influences the physical development of the child. Children should be fed on nothing but the most strengthening foods.

Ghirardelli's Ground Chocolate is both a food and a drink.

Children need no coaxing to take it. They like it and thrive on it. It is the final expression of purity, wholesomeness and deliciousness.

The cost is less than a cent a cup. Begin using it tomorrow.

In hermetically sealed tins.

Quality, strength and price remain the same.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

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GHIRARDELLI'S GROUND CHOCOLATE

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"DALMOY BLEND"

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1-Pound Tin Postpaid 75c

With every purchase of "Dalmoy Blend" we will send absolutely free of charge a half pound sample tin of our delicious A-C-C COFFEE. This offer is for a limited period only.

ORDER TODAY

THE ANGLO-CEYLON COMPANY
Importers of Teas and Coffees. 244 California St., San Francisco

Pick off the dying roses and water the vines so that they may continue to beautify your home. Roses, like crops, need a little fertilizer too.

Blake, Moffitt & Towne

Dealers in PAPER
37 FIRST STREET, SAN FRANCISCO
Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Oregon

The Markets.

San Francisco, Sept. 2, 1914.

WHEAT.

In common with all other grains, wheat has been going up steadily all week. This is a direct reflection of the Chicago market, where cash wheat has advanced seven and one-half cents a bushel during the week. Here the rise has not been so great, quotations having marked up only five cents per cental.

California Club, ctl.	$167½	@1.70
Forty-fold	1.65	@1.70
Northern Club	1.67½	@1.70
Northern Bluestem	1.75	@1.80
Northern Red	1.62½	@1.70

BARLEY.

Barley has advanced rapidly all week in the local market; and advices from Oregon and Washington show that similar conditions prevail in the north. Choice feed, which is practically the only kind quotable here, is now selling at fifteen cents over the prices of a week ago.

Brewing and Chipping		Nominal
Choice Feed, per ctl	$1.15	@1.20
Common Feed		Nominal

OATS.

Both seed oats and white oats were marked off the list this week, leaving red feed as the only variety in sufficient supply for quotations. Oats have also felt the effects of the war, and have advanced ten cents per hundred during the week. According to reports from the north, the Portland oat market is still more active, a top price of $27.50 per ton having been reached at the close of last week.

Red Feed	$1.20	@125
Seed		Nominal
Gray		Nominal
White		Nominal
Black Seed		Nominal

CORN.

The only new feature in the corn market has been the arrival of a considerable quantity of Argentine corn in very poor conditon. This has been looking for buyers at 75 and 80 cents, though a portion of it was destroyed as unfit for use. It is now reported that the remainder of the lot has been taken over by a single mill.

California Yellow		Nominal
Eastern Yellow	$1.90	@1.95
Eastern White		Nominal
Egyptian		Nominal
Milo Maize		Nominal

RYE.

In the general activity in the grain markets, rye seems to have been lost sight of. There has been very little business, and no changes in prices.

Rye, per ctl	$1.40	@1.50

BEANS.

After the recent fluctuations, the bean market seems to have become steadier, though all lines are reported as firm. Reports as to the new crop continue generally favorable. Local stocks are getting closer cleaned up all the time; and it looks as though the new crop would find a practically bare market. It is understood that there has been further buying in the South of new crop limas for future delivery. Horse beans have been marked up twenty-five cents.

(On wharf.)

Bayos: Cal., per ctl		Nominal
Mexican	3.50	@5.00
Blackeyes	3.50	@4.50
Cranberry Beans	4.25	@4.50
Horse Beans	2.50	@2.75
Small Whites	5.25	@5.75
Large White	4.50	@5.00
Limas		7.50
Pea	5.25	@5.50
Pink	4.50	@4.75
Red Kidneys		Nominal
Mexican Red		Nominal

SEEDS.

The seed situation continues about as before, though the tendency of prices is still upward. Both hemp and millet have scored advances in spite of a very small demand. Other lines continue as before.

Alfalfa		Nominal
Brown Mustard, per lb		3¾c
Canary		Nominal
Hemp	3	@ 3½c
Millet	2¾	@ 3¼c
Timothy	7½	@ 8 c
Yellow Mustard		Nominal

FLOUR.

Cal. Family Extras	$6.20	@6.60
Bakers' Extras	5.10	@5.70
Superfine	4.20	@4.50

HAY.

Hay has been the exception to the general rule this week. Receipts have been large and prices have dragged more or less. Considering the large arrivals, prices have held up fairly well, most lines being quoted at the old figures, and with drops of only 50 cents per ton on others. Hay dealers here claim to be crowded with stock, though the reports from some of the hay growing districts show that there is still a large amount in the field.

No. 1 Wheat, or Wheat and Oats	$8.00	@ 9.00
do No. 2	6.00	@ 7.50
Tame Oats	7.00	@11.00
Barley	6.00	@ 8.00
Wild Oats	6.00	@ 8.00
Alfalfa	6.00	@ 9.00
Stock Hay	4.50	@ 5.00
Straw, per bale	30	@ 45c

FEEDSTUFFS.

Practically everything in the feedstuffs line is up except cocoanut and oilcake meal; and these will probably be quoted at considerably higher prices within a day or two. Bran and shorts are very scarce, one dealer asserting that ten tons of bran could not be bought in the whole city. Rolled grains are up in response to the increased prices for whole barley and oats.

Alfalfa-Molasses Meal, per ton	$19.00	@20.00
Alfalfa Meal, per ton	13.00	@14.00
Bran, per ton	30.00	@31.00
Oilcake Meal	33.00	@35.00
Cocoanut Cake or Meal	26.00	@27.00
Cracked Corn	42.00	@43.00
Middlings	34.00	@35.00
Rolled Barley	23.00	@24.00
Rolled Oats	29.00	@30.00
Shorts	33.00	@34.00

VEGETABLES.

The general tone of the vegetable market during the last few days has been rathey easy, with large accumulations in tomatoes and in some other lines. Green peas, squash and celery have advanced, while all varieties of beans have dropped off from the top figure of a week ago. A small arrival of late delta asparagus attracted some attention; but it was quickly closed out at from $1.50 to $1.75 per lug box, and the market is again bare of asparagus.

Green Peppers, lugs	20	@ 35c
Carrots, per sack	35	@ 50c
Green Peas, lb	2½	@ 5c
Tomatoes: Delta, lugs	20	@ 35c
Beans: Wax, per lb.	1	@ 2c
String	1	@ 2c
Lima	2	@ 2½c
Cucumbers, lugs	20	@ 30c
Eggplant, lugs	35	@ 50c
Green Corn, sack	75c	@ 1.00
Summer Squash, box	20	@ 30c
Cream Squash, box	40	@ 50c
Okra, box	25	@ 40c
Celery, doz.	30	@ 40c

POTATOES AND ONIONS.

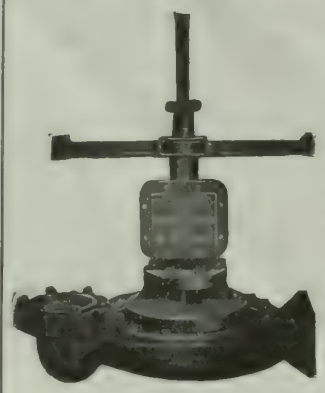
The weakness in potatoes noted last week was made more manifest this week by a further recession in prices. Both Burbanks and sweets are down. Onion prices are unchanged. The first of the nwe crop Oregon onions have made their appearance in the Portland market. The dry weather in Oregon has produced a short crop and a predominance of small sizes.

Potatoes:		
River Burbanks	70c	lb $1.00
Sweet Potatoes, ctl	1.50	@ 1.65
Onions, New Yellow, sack	40	@ 65c
Garlic, Cal., per lb	10	@ 15c
do. Oregon	10	@ 15c

POULTRY.

Under unusually heavy arivals of both eastern and local stock, the market has held up well. There has been a slight advance in the quotation for large hens; and so far there have been no reductions. Dealers are, however, predicting somewhat lower prices before long if the arrivals continue as heavy as they have been.

The KROGH Vertical Pumps



New Type Vertical

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts mean less friction and greater efficiency.

Get our Bulletin No. 78 before deciding on a pump.

KROGH MNFG. CO.

SAN FRANCISCO LOS ANGELES

Large Broilers	19	@20 c
Small Broilers, per lb	19	@20 c
Fryers, per lb.	19	@20 c
Hens, extra, per lb	17	@18 c
Hens, large, per lb	18	@19 c
Small Hens, per lb	15	@16 c
Young Roosters, per lb	20	@21 c
Squabs, per doz.	1.50	@ 2.00
Geese, per pair	2.00	@ 3.00
Ducks, doz.	4.50	@ 8.00

BUTTER.

The butter market has been decidedly firm all week in contrast with the week preceding. Extras and firsts have been in active demand, and are now two cents above the quotations of a week ago. The call for prime firsts has not been so noticeable, and the increase here is less marked than in the others.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	30½	31	31½	32	32
Prime Firsts	27	27	27	27	27½	28
Firsts	25	25	25	25	27	27

EGGS.

In eggs there has been a turn for the better; and the market has rather more than recovered what it lost last week. There has been a notable advance in selected pullets, which are now quoted at the same figure as firsts.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	34½	34½	34½	35½	35½	35½
Firsts	30	30	30	30	30	30
Selected Pullets	27½	27½	28½	29	29½	30

CHEESE.

The cheese market has moved along without change of any sort this week. Prices are fairly well maintained.

Fancy California Flats, per lb	14	c
New Young Americas, fancy	15	c
Monterey Cheese	13½ @	14½c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras	28	28	28	28	29	29
Eggs	34	34	33	33	34	34
Cal. Cheese:						
Flats	13¼	13¼	13¼	13¼	13¼	13¼

DECIDUOUS FRUITS.

The market has firmed up more or less this week; and most of the changes in prices have been upward. Figs are lower for both black and white. The apple market is still rather unsatisfactory, though the top price for Gravensteins has been marked up 25 cents. The demand for cantaloupes is still rather below the supply, and prices have gone down still further. There is no change in watermelon quotations, but the supply is large and lower prices are expected. Grapes are coming in in better supply and in good conditon; and prices are pretty well maintained. The only change in berries is a drop of 50 cents in the top price of blackberries.

Huckleberries, lb	7	@ 10c
Blackberries, chest	$1.50	@ 3.00
Strawberries, chest	1.50	@ 3.00
Apples, New Crop:		
Belleflowers	75	@ 90c
Alexanders	50	@ 75c
Gravenstein	50	@ 1.00
Crabapples	40	@ 85c
Quinces, box	75	@ 1.00
Nectarines, crate	75	@ 1.00
Pears, box, large	1.00	@ 1.50
do No. 2	50	@ 75c
Peaches, lugs	65	@ 1.00

Look them all over

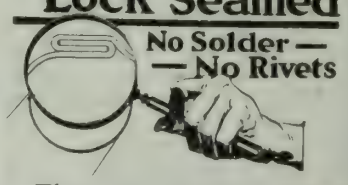
While at the State Fair look closely at all kinds of irrigation pipe.

They will all be much the same except in that vital point, the seam.

There are three methods of seam construction—riveted and soldered seams, locked and soldered seams and Ames-Irvin Lock-Seams.

We call your attention to the fact that Ames-Irvin Lock-Seam is the only one without rivets or solder.

Ames-Irvin Lock Seamed



There are no rivet holes to rust and no solder to break and separate. Special machinery in use only by us does the work.

Each sheet of steel is edged, locked together and set down under 3,500 pounds pressure. The union of metal is complete without the weakening rivet holes and without requiring solder

Irrigation Pipe

Ames-Irvin underground pipe, with both flange and cylinder joints, is made in the same careful and workmanlike manner as our Lock-Seam pipe. Send for further information.

Ames-Irvin Lock-Seam pipe won first prize against all competitors at the State Fair in 1913 and at Fresno and San Jose County Fairs in 1912.

AND THEY COST NO MORE THAN OTHER PIPES.

Ames-Irvin Company

8th & Irwin Sts.
San Francisco

do, small, lugs	40@ 60c
Plums, crate	75@ 1.00
do, lugs	75@ 1.25
Prunes, lugs	75@ 1.25
Figs: Black, double layer	40@ 60c
White, single layer..	30@ 50c
Cantaloupes, crate	50@ 60c
Watermelons, doz	75@ 1.50
Casabas, lugs	50@ 75c
Grapes: Malagas, crate	40@ 60c
Tokays, crate.....	50@ 65c
Seedless, crate	50@ 60c
Muscat, crate	50@ 65c
Black	25@ 50c

DRIED FRUITS.

Dried fruits are still in a very uncertain state. The large packers hesitate to quote prices; and evidently prefer that the growers should hold the stock for the present. Some extra fancy dried peaches have been sold by local commission houses at four and one-half cents; and some extra fancy stock has been bought in the San Joaquin Valley at four cents. Probably that is about the top price now for the very finest stock. The apricot market appears to be weaker, though eight and one-half or nine cents could probably still be obtained for the best of fancy grades. Packers here are not, however, soliciting business at that figure. Prunes are a little firmer at the old figures. There is a little more activity in raisins with no change in prices.

Evap. Apples, 1914 ...	5 @6 c
Apricots, 1914	8½@9 c
Figs: White, 1914	3c
Black	2 @2½c
Calimyrna, 1914 ...	4½c
Prunes, 4-size basis, 1914	5 @6 c
Peaches, new	3 @4 c
Pears	8 @9 c
Raisins (in sweatbox):	
Loose Muscatels	3¾@4 c
Thompson Seedless .	4½c
Seedless Sultanas...	4 c

NUTS.

Almonds, 1914 crop:	
Nonpareils	18¼c
IXL	17¼c
Ne Plus Ultra	16¼c
Drakes	14¼c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell ...	Nominal
Budded	Nomnial
No. 2	Nominal

HONEY.

Comb: White	12 @15 c
Amber	8 @10 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off grades	3 @ 4 c

BEESWAX.

The wax market is reported firmer this week, with prices held at the old figures.

Light	31 @32½c
Dark	27½@30 c

WOOL.

Fall clip:	
San Joaquin	7@ 9c

HOPS.

The harvest is moving along satisfactorily; and it is reported that some little selling has been done. Buyers are out looking over the situation; but not much actual buying is being done.

1913 crop	14 @16 c
1914 crop	15 @17½c

LIVE STOCK.

While there have been no further changes in the market this week, further advances are among the possibilites of the near future. Hogs are very scarce, and pork prices are accordingly firmer. The shipment of Coast stock east continues.

Steers: No. 1	6¾@ 7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 5 c
Calves: Light.....	8½@ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8½@ 9 c
150 to 250 lbs.....	9¾@10 c
100 to 150 lbs.....	9¾@10 c
Prime Wethers	5½@ 5¾c
Ewes	5 @ 5¼c
Milk Lambs	6½@ 6¾c

HORSES.

The horse market shows a little more activity recently with more than the usual number of auctions. The stock offered is rather better than in recent sales, and prices have been satisfactory.

Heavy drafters, 1700 lbs. and over	$225@275
Light drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500...	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range..	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

DRESSED MEATS.

Steers	10 @11 c
Heifers	10 @10½c
Veal, large	13 @14 c
Small	15 @15½c
Mutton: Wethers	10½@11½c
Ewes	10 @10½c
Suckling Lambs	11½@12½c
Dressed Hogs	15 c

SPECIAL DECIDUOUS MARKET REPORT.

By J. L. Nagle.

Sacramento, Cal., Sept. 1914.

Owing to the poor returns during the last ten days from the sale of Malaga grapes, due to excessive shipments, arrangements were made with most of the shippers to curtail the output for at least two weeks, with a view of bringing about better conditions.

Tokays are now moving from the Florin, Woodbridge, Acampo and Lodi districts and shipments will be very heavy this week. Though there is considerable mildew in a great many vineyards, the berries are unusually large, well colored and contain considerable sugar.

There has been a sharp decline in the peach market during the past week, due to the heavy arrivals from Colorado, Utah and the Northwest. At the present writing, there is practically no demand for California Freestones, though several markets in the east and southeast appear quite active on Clings.

Barelett Pears are cleaning up rapidly; most of the stock is arriving over-ripe, but good quality fruit is bringing exceptionally fine prices.

The market for the past week ranges as follows:

New York—Bartletts $1.59 to $2.30; B. Hardy, $1.73 to $1.83; G. Duke, $1.60; Kelsey, $1.03; Gross, $1.54 to $1.65; Crawford, 72c; Malagas, 87c to $1.18; Tokays, $1.30 to $1.33.

Chicago — Bartletts, $1.25 to $1.95;; B. Hardy, $1.38; G. Duke, $1.35 to $1.60; Kelsey, $1.04 to $1.50; Gross, $1.48; Crawford, 70c to 85c; Malagas, 60c to $1.25; Tokays, $1.10 to $1.90.

Boston—Bartletts, 85c to $2.20; B. Hardy, $1.15 to $1.20; G. Dukes, $1.05 to $1.70; Giants, $1.00 to $1.75; Elbertas, 65c to 80c; Kelsey, 50c to $1.45; Gross, 80c to $1.80; Crawford, 65c to $1.00; Malagas, 65c to $1.20; Tokays, 80c to $2.70.

Philadelphia — Bartletts, 80c to $2.45; B. Hardy, 75c to $1.20; Malagas, 50c to $1.20; Tokays, 75c to $2.15.

The number of cars of deciduous fruits shipped east to Sept. 1st totalled 8534¼ cars, as against 7634¼ to the same date last year.

CITRUS FRUITS.

Twenty-one cars of Valencias auctioned in New York on Monday averaged from $1.85 to $3.35. In Philadelphia 8 cars averaged from $1.80 to $2.25 and in Boston 12 cars averaged from $1.55 to $3.05.

As the war failed to cut off the supply of European lemons, there has resulted a glut of the European article in the Eastern marts; the available supply at this time being 90,000 boxes. This is 25 per cent more than was available at this date last year and exceeds the same date two years ago by no less than 80,000 boxes. It is difficult, therefore, to quote prices for California lemons under present conditions..

In San Francisco new navels are now quoted at $2.25 to $2.75 for fancy, with lower graded offered as low as $1.25 per box. Limes are now practically out of the market and are no longer quoted. Lemons are lower, the better grades being offered at $8 per box, while off grades may be had as low as $6.

Oranges: Valencias, box.	$1.75@2.50
Med. Sweets, box.....	1.00@1.50
New Navels, fancy	2.25@2.75
Tangerines, crate	75c@1.25
Grapefruit, seedless, box	1.00@2.50
Lemons, box	6.00@8.00
Limes, case	Nominal

Publisher's Department.

We have moved! Every reader knows what that means. Getting out this special Fair number in the midst of moving meant a great deal of hard work, and we trust that the paper, when it appears, will not show too plainly the marks of the troubles we have had during the past week.

Our new office is on the third floor of the Underwood Building, at 525 Market street, where we have more room in which to grow, and we confidently expect the Rural Press will keep up the rate of gains it has made during the three years in our former location.

During the past week the number of new subscribers added to our list was 314. Some gain, don't you think? The boys in the field are making a batting average these days that they may well be proud of.

Have you yet secured a copy of the book "One Thousand Questions Answered," of which an advertisement appears on another page? You need this book every day on the farm, and we have copy for you at our office. Send for our special subscription offer in connection with it.

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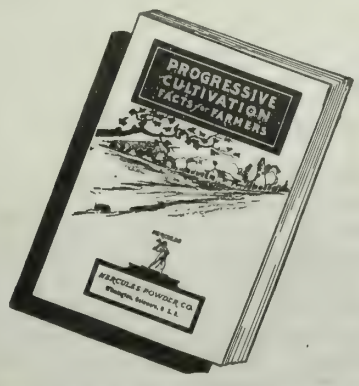
You save time, labor, and as a result, money, when you use Hercules Dynamite for the removal of rocks or stumps, the felling of trees, the draining of land, the sinking of a well or cistern, etc. You not only save time and labor but also actually make money when you use Hercules Dynamite for tree planting and sub-soiling. It greatly increases the yield of fruit and of field crops.

Write for our book, "Progressive Cultivation." It contains information on the use of dynamite that you will find valuable.



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Sub-soiling increases the fertility and productability of land many fold. Comparative tests that have been made with corn, wheat, alfalfa, and other crops prove this conclusively.

Such a test is easy to make. Sub-soil half of a field. Leave the other half in its present condition. Then do your planting. The crop will tell the story.

If your land has never been sub-soiled you should make this test. Then decide for yourself whether or not sub-soiling is worth while.

In "Progressive Cultivation" you will find some interesting information on this subject.

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Not once, but hundreds of times, the fact has been demonstrated that trees planted in dynamited holes, are stronger, grow faster, live longer, and yield more heavily, than trees planted in spade dug holes. Furthermore, you can plant much more quickly, more easily with dynamite than you can with a spade. As a result you gain at both ends.

If you are not familiar with the dynamite method of planting you are overlooking a factor in your work of which you should take advantage.

In "Progressive Cultivation" full details are given regarding this important use of dynamite. There is a copy waiting for you at our office. Write for it.

Overhead Garden Irrigation

[Written for the PACIFIC RURAL PRESS.]

On his 2-acre vegetable garden near Fresno, A. Leber has an irrigating system which has enabled him to sell onions and other green stuff all summer at times when the other gardeners had none. It saves a great deal of labor, uses less water and consequently less power, applies it evenly to all parts of the patch, and thoroly. It grows better vegetables in less time, and on the sandy soil of that section it does not leach away manure, for nowhere is the soil wet far below the roots of the vegetables.

About two years ago, Mr. Leber came from Indiana where they have rain and a prejudice against irrigation. On arrival here, he had no rain but still believed that rain was best. So he connected his 2-inch centrifugal pump run by a 3 h.p. motor, to a few small water pipes laid about the garden. These pipes were fitted with others a few feet long at right angles so they would stand straight up. On top of the vertical pipes he fitted lawn sprinklers and set the pump to work. When that part of the garden was wet enough he moved the pipes to another section. But that was too much work, and in spite of ridicule and a discouraging amount of wet-blanket advice, he bought a lot of ¾-inch pipe at 3½ cents a foot in San Francisco. Some second-hand 1-inch pipe cost 3 cents. He bought enough lawn sprinklers at $3 a dozen in San Frnacisco to total 150. Six-foot lengths of the pipe with sprinklers on their ends were cut into the horizontal pipes so that some of the sprinklers were 20 feet apart and others 30. He now believes that 25 feet apart each way is the proper distance with his system. The distance the water is thrown depends on the pressure.

The horizontal pipes were buried six inches deep, each having 5 to 8 vertical ones on it and each fitted at one end with a hand valve which admits or excludes water from that line at pleasure. Where there are eight sprinklers on one line, the first length of the underground pipe is 1¼ inches in diameter, the next three are one inch, and the rest 3 inch. Smaller pipes would nullify a great deal of pressure by the friction of the water against their sides. The pipes do not interfere with plowing because the garden is plowed the same direction they run.

There is only a slight water-lift, so the little motor maintains plenty of pressure on 40 sprinklers at once. If less are used, according to Mr. Leber, who was so informed by a representative of the power company, less electricity is used, automatically. Centrifugal pumps only are practicable for the sprinklers.

If the soil is entirely dry, the sprinklers will wet it eight inches deep in eight hours; but in practice, it is not allowed to dry so much, so a four-hour sprinkle is sufficient.

Water is never turned on before 6 p. m. nor left running after 7 a. m. He usually turns on 40 about 8 o'clock; then at midnight turns the water into another 40. The latter sprinkling is preferred because the leaves dry off sooner, thus reducing danger of fungus. This must be specially practiced with such vegetables as cucumbers and tomatoes, while the lettuce, radishes, cabbage, beets, etc., may always be sprayed first.

The frequency of application depends on the crop, the weather, and the soil. Beans are sprinkled about every fourth night while the nights are not hot; young plants oftener; if hot and windy, more frequently; in cool weather less often; also on heavy soil, small vegetables oftener than big kinds.

The soil does not bake as with ditch irrigation, and much less cultivation is required or practiced. A lot of beans, without sprinkling, suffered so nothing was produced good to eat. But since the new system was applied to them, they are doing finely. A lot of cauliflower was transplanted, wetting each plant with a cup of water and not sprinkling for a day or two. The ground baked and got hot and burned the plants dead. Frequent sprinkling keeps the soil moist, and hence always cool, so no reflection of heat causes damage.

Mr. Leber developed his system himself, and says he would use it even gardening in the East; but he has found that other folks used it on a ten-acre garden near Fresno before he did. Lawns are sometimes sprinkled this way too.

MOVABLE GAS ENGINES FOR PUMPING.

Nickerson and Lupton have a big peach ranch in Merced county which suffered last year and this for water. Such troubles are over, for they now have four wells from which the water will be taken by 6-inch pumps run by one 12 h. p. gas engine, and two 25 h. p. which are mounted on sleds to be moved from one well to another at the high points on the place. Of course they will be used for the manifold gas-engine purposes about the ranch all the year.

DEVELOPING UNDERGROUND WATER.

A 193-foot artesian well is flowing an estimated quarter million gallons per day on the place of M. J. Schoonderwoerd at Dairyland Farms, Chowchilla. This flow was so satisfactory that Mr. Schoonderwoerd drilled another at the other end of his property, getting water at 200 feet, and the two wells furnish his irrigation. The cost of both was only a little more than he expected for one and he does not have to pay for gasoline or electricity.

Mr. John Tweedy, of Watts, recently installed a new pump of the Layne and Bowler 1914 model on his property which is said to be giving excellent results. The plant produces about 1250 gallons of water per minute on a forty-six foot lift and with a fraction of over twenty-four h. p. input into the motor, or about twenty h. p. delivered into the pump pulley. As Mr. Tweedy's well was not previously of sufficient diameter to admit the installation of this pump, he contracted with a pumping concern to rotate a twenty-four inch casing around it, and after

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getting down to the desired depth, the smaller casing was cut off and removed from the well and the new model pump was installed.

A Los Angeles pumping concern reports the installation of one of their new model turbine pumps to take the place of a plunger type pump on Arth Brothers' property. The new pump has a much larger capacity and is said to avoid sand troubles because it has no valves to wear.

Mr. L. A. Fink of Corona has installed a new turbine centrifugal type pump in the well on his property. The bowls are set at a depth of 100 feet, with the suction below. This, however, is only a temporary installation until a new well can be drilled, but Mr. Fink is pleased to find that it is furnishing 50 miner's inches of water.

Recently the George Junior Republic, requiring a larger supply of water for farming purposes, contracted with a Los Angeles pump concern to remove their old pump and install an up-to-date pumping plant in seven days after receipt of the order. This was accomplished, and an abundant supply of water during the present season has been available, much to the satisfaction of the officers of the Republic.

The best fields are located near the well and for these the water is discharged into a gravity line, while the domestic supply and that for the alfalfa ranch requires it to be conveyed by pressure to a reservoir at an elevation of 115 feet.

No change in the machinery or power is required to adjust the pump to these different levels as the adjusting is done automatically.

The twelfth artesian well on the 1760-acre Stoddard Jess alfalfa ranch near Hanford was recently finished 2020 feet deep. All of these are producing a good supply.

COST OF TRACTOR FUEL.

A tractor of the caterpillar type was recently seen plowing hard soil on the Barton place near Fresno with three moldboards, on a day when it was too hot to look at a thermometer. It had pegged along all forenoon, stopping only once for water. The operator said that he used 22 gallons of distillate and 4 gallons of water, besides plenty of machine oil, for a 10-hour run.

KAINIT FOR LAWN PESTS.

To the Editor: Has C. J., Mt. View, tried Kainit on his lawn? We believe he will get relief from his pests.—M. Braughler, Santa Rosa.

(Kainit is a potash salt used as a fertilizer; it has some killing power for ground pests and the suggestion is therefore rational.—Editor.)

An innovation to be introduced at the Butte County Rice Exposition this week, will be the butter fat contest of cows maintained on rations of rice straw and rice products. The contest will be under the supervision of the State Dairy Bureau and it is thought will prove highly educational.

PULL OUT THE STUMPS!
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Dunham-McLaughlin Company

Western Stables
OAKLAND, CALIFORNIA

THE PACIFIC RURAL PRESS

Vol. LXXXVIII—No. 11 San Francisco, Saturday, September 12, 1914 Forty-fo[illegible] [illegible]ear

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California's Milch Goat Possibilities.

[Written for the PACIFIC RURAL PRESS.]

When the average person thinks of goats at all, his mind usually reverts to some newspaper or magazine cartoon in which the artist has Mr. Goat feeding on tomato-can wrappers or some equally ridiculous feat.

Now if those artists wish to keep up with the times in goatdom they will change that tomato can to a manger full of alfalfa hay and concentrated feed, and also include in the picture a pretty milkmaid with a milkbucket, for that is more in accordance with what goat men believe will be the future history of the goat, or, to be more exact, the milch goat, for there is still a notion in many people's minds that a goat's a goat, and that they are all milkers.

Perhaps it is due to the comparative newness of the milch goat breeders in the State that more is not known of their ability as milk producers, but that this knowledge is being acquired by increasing numbers yearly, is evidenced by the keen demands being made upon the breeders and the inquiries received by all agricultural and college journals.

There are two breeds most in favor among milch goat fanciers at this time, the Toggenberg and the Saanen, the practice being to breed the bucks from either of these breeds onto ordinary-grade does and in this way build up the flock for milking qualities.

The goat which is most familiar to the average person is the Angora, a band of which are shown in the accompanying picture. This breed is much more handsome, due to their heavy fleece of mohair, than either the short-haired Toggenberg or Saanen, whose large udder development makes for a heavy milk flow, but less beauty.

Due to their scarcity, no large commercial goat dairies have as yet been established in California, and most of the available data for production, cost of feeding, etc., has to be secured from breeders with small flocks.

Among the older and better informed of these breeders, is George Langnois, of Sonoma county, who has a small flock that he maintains on city lots, not because a large acreage would not be better for the establishment, but becau[illegible] is all of the land that he owns.

With such small quarters it is necessary to purchase all of the feed. This allows Mr. Langnois a better opportunity of determining the actual cost of maintenance, a thing that would be almost impossible were alfalfa or other pasture lands available.

In feeding his Toggenbergs, Mr. Langnois follows, pretty closely, the usual methods practiced by the progressive cow dairyman, allowing them free access to small racks of alfalfa hay, and using such concentrates as dried beet pulp, bran, and ground grains. It is not essential that the goat ration be of such high quality as this, but it is thought that the better the feed the better the production. No regulation ration can be laid down for the feeder of goats, any more than it can for the feeder of other stock, but a ration of ½ pint rolled oats or wheat, ½ pint of dried beet pulp, and ½ pint of bran fed twice daily, in connection with alfalfa hay, has been found very satisfactory. By keeping accurate account of all feeds used, Mr. Langois states that the average cost of maintenance, under his conditions, has been $1.50 a head a month.

The Long Mohair of the Angora Goat, as Shown Above, is in Direct Contrast to the Saanan and Toggenberg, Whose Milking Qualities Render Them Less Beautiful to the Eye.

With goats as with cattle, early breeding may be practiced, but is not considered good business, as it makes for a smaller framed and less hardy animal, things that are as essential to the milk goat as to the dairy cow. Where big-framed and vigorous does are desired, they should be bred when about one and a half years old and kid when about two years old.

At that time a good doe should give, with her first kid, from two to three quarts of milk daily. Such an animal will usually increase that amount with her second kid to three or three and a half quarts daily. In this connection it is of interest to know that a goat at the University Farm, at Davis, gave 70 pounds of milk in one week, while on test last spring.

The fat content of goat's milk varies with the different animals, as with cows, tests of 3 per cent to 5 per cent or 6 per cent being the rule. As goat milk will not likely ever be used extensively for butter making, however, this test is not nearly so great a factor as with dairy cows.

Goats average about two kids a year, but sometimes give birth

(Continued on Page 266.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS, SAN FRANCISCO

Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 8, 1914.

Stations.	Rainfall Data			Temperature Data Past Week	
	Past Week	Seasonal to Date	Normal to Date	Max'm	Min'm
Eureka	.22	.24	.34	62°	46°
Red Bluff	.00	T	.10	90	52
Sacramento	.00	.00	.05	84	50
San Francisco	T	.01	.01	70	52
San Jose	.00	.00	.08	76	42
Fresno	.00	T	.00	88	54
Independence	.00	.16	.00	88	48
San L. Obispo	.00	T	.05	82	48
Los Angeles	.00	.01	.00	86	56
San Diego	.00	.00	.00	76	58

T means trace
*Of this amount .10, not previously reported, fell on July 19-20.

The Week.

Distinct cloud masses differentiated from the diffused aqueous vapor of August are one token that the year has passed the turn and that a distinctly new group of agricultural duties impends. If you live directly on the coast this phenomenon is overhead and the measure of it is the minute fractions of precipitation recorded in the table at the head of this column. If you live in the interior and face the north you can see it over your left shoulder—separate clouds displacing fog banks on the ridges and summits of the coast ranges. This week, too, you may have seen the harvest moon at night fall, gilding tumulus clouds on the crests of the Sierra Nevada—also a token that along that grand boundary of the state the scenes are being set for a new rainy season. Of course you have noticed the untarnished gold of that harvest moon as it has turned upon peaceful and prosperous California the full breadth of its borrowed sunlight and you have thought of the rivers of blood which traverse the face of the moon as it is turned upon the eastern hemisphere, bringing rivers of tears upon the face of mankind, furrowed as never before with sorrow and bereavement, and you have given thanks that your ways are not as other men's ways and your thoughts are not as their thoughts—but we must not weary you with war-writing. One thing, however, crowds for utterance. It is a simple word of admonition and thanksgiving for the attitude of our foreign-born Americans: they are standing as living exemplars of the genius and destiny of this country. "I love my birthplace and my old people," said a native of mid-Europe to us the other day, "but I would not fight for them. I would fight to save the United States, because in this country men can fight of their own choice for what they believe in. In Europe they are driven to fight for what they do not believe in by ruling classes who do not care whom they kill to have their own way"—and he grimly brought down his long lash upon the bunch of mules he was driving, as though personifying the despot whose cruel ambition he has learned to hate. This man, thought we, embodies the everlasting protest against oppression which was written in the birth-certificate of this country and for the enforcement of which it has grown to leadership among the nations.

The Lesson of the Hour.

The lesson of the hour for Californians is to get busy as they never did before. The turn of the seasons noted above is the time for beginning. There is every prospect that the opening crop-year will be one of great abundance. Without regard to sunspots or planets, woodchucks or wild geese, the plain lesson of California life, as known to Americans, is that a turn from a low rainfall period brings abundance for several years. We are at the opening of a plenteous epoch and our life and industry should be richer in rewards than during any preceding decade. Let those who have spare money get good land: it is the basis of all wealth. Unless you have very definite plan and knowledge do not pay too much attention to keen business cuts: they work both ways—except for those specially gifted as noted. Do not think too much that good will and opportunity, which some men can create for themselves, will draw you up by suction. There is too much danger that you may be flattened on the earth with a punctured Zeppelin spread all over you. Get good land and get a good hold on it. Do not trust to hold it by a margin. Learn a lesson from Madam Dido in her Carthage deal. When she bargained for the land which a hide would cover, she did not simply hold on by the tail; she got her leather all around it. If she had not, she probably never would have been able to serve up a juicy tenderloin to the much-wandering Aeneas. Therefore we say, get good land and as much of it as your old leather wallet will cover well: then you can work and wait. Do not expect to get a farm in Golden Gate Park by paying down a car-fare margin. Go farther away and get more good land and get a better hold on it. Let the great flood of California development wave-up to your more distant possessions. If you have a good head for small figures, and a good arm for a team and a good leg for the earth, you can make grub and taxes on good land anywhere—even if the mail carrier only comes once a week to bring you the Rural Press—you need not fear losing the land, and the increment in value will make you well-to-do. Of course we do not insist on such a struggle. You can pay a thousand an acre if you are able, but get good land and a good hold on it. It is the lesson of the hour in California.

Signs of Activity in Fruits.

This year's activities throw shadows forward which will lengthen as we advance. In spite of the disarrangement of eastern appetites and finances by the outbreak of the war, we have sent them so far about a thousand carloads more of fresh fruits than last year and though prices in deciduous lines have been low now and then, we perhaps ought to be glad that the east was not scared clean down to boiled roots and breakfast foods. It is a token of the strength of the California fruit-shipping industry that disasters do not cripple it, for it is naturally out to be hit by any kind of mid-summer madness that crops out on the planet. All the railway strikes and political ructions have hit it and now it makes a new record for quantity in the face of the greatest war in history. It takes a good business to stand that sort of thing. And then our fruit-preservers in spite of their financial troubles are wisely making a great push for supplying the coming hunger in Europe. It is important that a cannery at Yuba City has made this year its record peach-run of 3000 cases a day and that more than 100,000 cases of canned peaches will be sent this year from that excellent peach-point alone. It is also true that this work has been matched in the peach districts of the San Joaquin valley. There are, in fact, too many instances to mention, the significance of which is the strength of our fruit industries and the warrant for building even more strongly upon them. There was actually an increase of the "farm value" of our tree fruit crop of from about twenty-four millions in 1900 to about forty-two millions in 1910—an increase of about 60 per cent although some figures are in circulation serving to knock tree fruits in the interest of vines; all of which is not wise and should be repudiated by fruit growers. There is every reason to believe that our orchard interests are a sounder and more promising line of investment than ever and that California is going straightforward to fulfill her destiny as the great fruit garden of the United States and the greatest source of cured fruits in the world's commerce.

Get Busy for Field Crops.

The beginning of a new crop year, reasonably anticipated to be very favorable, has, of course, very sharp suggestions for field cropping. There is every reason to expect better prices for all staple foods this coming year than for a long preceding period. No matter how soon the war stops, and the sooner the better, there will surely be shortage in the world's food and peaceful countries will have to do their best in piling up surpluses. It is now time to get ready to do the very best California can do in grains, beans, potatoes, onions, staple truck vegetables, etc., for we shall have a great demand and a way to reach distant markets in about half the old time and by less than the old costs of transportation. A good deal of land capable of making wheat, barley, rye and corns has had something of a rest while owners have been waiting for subdivision games to play. Every acre of such rested land should go to work this year under direction of owners or lessees, as the case may be, and conditions seem to promise maximum return for any sort of decent work in this line. Besides idle land, there is considerable acreage of alfalfa which should be broken up and go into grain this year. The low price of alfalfa hay will invite this turn and thus force owners into rotation which they really should choose without compulsion. If one-half the present alfalfa acreage, which is run for hay-sales and not for use with home stock, should be broken up for grain this year, it would make hay profitable again and give a lot of good grain for good prices also. There is a lot of alfalfa too carelessly put

in and poor in stand which should be looked upon, not as a loss, but as a gain for grain or for sugar beets or other staple field-crop. Such crops would be large after the alfalfa and money can be made to go back into alfalfa on a better basis than at first—if this seems desirable, as it surely will on a rotation schedule. Alfalfa which is too old, or doddered or scant in stand on poorly checked land, should go out of sight this year. It is "heads I win and tails you lose" with every grower who plays that game with alfalfa which does not pass the "efficiency expert" and we are not sure but a good deal of good alfalfa will pay better underground than above it. If you decide to play this game, play it well, however. Get good tools and good teams or tractors and turn it down till the stems tickle suffering Europe.

When the Cows Come Home.

Of course what we have said about turning alfalfa stems and roots into barley and beans is on the supposition that the land owner desires to keep in crop-farming and does not care to rise to the higher economy of the animal products. For these, of course, no good alfalfa should be plowed under but every possible pound of it fed on the place: not sold as hay or used as a direct fertilizer though added fertility is an important by-product. We are always firm in the belief that the highest use of good forage-land is in the muzzle of the herbivorous animal — providing always also, that both the owner and the animal are good of their kinds. Our stock-writers are continually working to advance the capacity of the latter through the increased knowledge of the former, so that it is not the function of this writer in this place to rise to the details of ways and means but rather to glide along on basic principles. The Pacific Rural Press is co-operating with every believer in good stock to popularize animal husbandry in this state because it is good for the owner, good for the land and California should be famous for it. Such great animal products as the best animals can achieve under our conditions, which have no equal for maximum of food-growth and minimum of costly care, should be more abundantly realized. These two are things which the world needs, as shown clearly by the course of prices for meat-products. Figures made public by the Department of Agriculture showed that on August 15th the price to producers for beef cattle, calves, hogs, sheep, lambs and chickens averaged $7.63 a hundred, against $7.20 the same day last year, $6.56 two years ago, $5.57 three years ago, and $6.67 four years ago. It is a new sort of statistical stew which mixes up all these kinds of flesh, but there is no better way to show that one can break into the animal industry anywhere and do well if he does it aright; and get better pay for his time and be less dependent upon hiring help than in any other kind of farming.

Where is the Money Coming From?

But when one is doing this kind of preaching he is liable to be interrupted by the question: "How can I get the money to do these better things? It costs money to work deep either with plow or dynamite. It costs money to get the start of power, tools and supplies to make the rotations you say are so good. Above all, it costs money to get animals and outfit for stock farming. How am I going to get the money?"

To be frank we cannot exactly tell how you are going to get the money, but we can tell how you ought to be able to get capital for such better production. As things now are, you will have to hunt for the money and pay more or less for it according to the kind of men you find owning money or handling it for others. As we have often stated, you are in danger of paying more for the handling than the owner gets for the money. We confess that if you pay too much the enterprise we have indicated becomes a game of hazard: some will do well, others ill, according to circumstances and the ability to master them. On the other hand, if the interest is reasonable, from an agricultural point of view, the average good man will win out and the state will be developed and advanced. Capital ought to be had for better farming on terms which will reward good average effort and intelligence; we cannot all be captains of industry. Those who believe this should make some effort to realize it. The problem is thus stated by telegraph from Washington, Sept. 5:

How to place the government emergency currency in the hands of the eventual borrowers, the farmers, at a low rate of interest, so that the banks cannot borrow the money from the government at 3 per cent or less and then charge the farmers and merchants 8 and 10 per cent was the problem facing the senate banking and currency committee tonight. The problem will have to be solved to the satisfaction of the senate before the currency amendments are finally passed or the opposition to them will be tremendous.

This of course refers to an emergency currency concerning the issue and use of which care should be had because of the danger of undue inflation, but the principle stated above is far broader than any present emergency. The occasion is seized upon by those who desire to liberalize the banking laws and they may well seize the opening to insert a wedge. No doubt they will succeed in finding a safe way by which 3 per cent money can be loaned for legitimate capitalizing of agriculture at 4 per cent, and then everything we have outlined will become practicable—when wisely manned and mannered.

Queries and Replies.

Limitations of Burr Clover.

To the Editor: I want information about burr clover. What is its feed value? What good as a forage crop? And its value to plow under for fertilizer? The weeds are very bad here, especially mustard and tar weed, and want something strong to help smother the weeds.—W. B., Willits.

Burr clover is about as good for feeding as alfalfa so far as nutritive contents go. It is harder to handle as hay, however, and usually has less feeding value per ton. It is fine to plow under as a fertilizer because it is a winter grower and uses water when there is water to spare and when green stuff can be best plowed under. But burr clover is an annual and must come every year from the seed. As a smotherer it does not compare with alfalfa. It grows low and generally does not cover well enough to prevent mustard from shooting through and it dies and dries while both mustard and tar weed are waving above it. Alfalfa keeps up the weed-fight because it grows tall and because it grows in the summer and because it fights underground also with its perennial roots.

Burr Clover in the Burr.

To the Editor: I have a lot of barley that when harvested was found to be full of burr clover. Can you advise as to the best way to clean or separate and is there any market for burr clover seed (in the burr)? I have heard it said that it was worth 5c per lb. in the burr —M. D., Winters.

Burr clover can be readily separated from barley by proper arrangement of any good grain cleaner. There is a market for the seed in the burr although the seedmen now handle only hulled seed. Write to any seedman advertising in the Rural Press and he will either make you a bid or refer you to those who operate hulling machinery. If you have enough of it to warrant it, an advertisement in the Rural would probably strike someone who can use it for a cover crop. Hulled seed is better, but until a few years back the seed was handled wholly in the burr. We do not know what it is worth in that shape.

Pre-Killing Dodder.

To the Editor: Can you give me the best method for killing dodder or love vine which infests a piece of land that I wish to set to alfalfa next spring?—J. W. B., Gilroy.

We presume you mean to kill the dodder on an old alfalfa field before you resow, because unless you had alfalfa before you are not likely to have the species of dodder which infest that plant. There is nothing to do but plow deep and make a good turning so as to bury the surface as far down as you can afford to. If you do that you are not likely to get dodder unless you buy it over again in unclean seed. Dodder seed is so very small that it has to be very near the surface to grow at all.

Injections for Borers.

To the Editor: Several months back I read in a farm journal that if one would inject a certain liquid into the holes made by borers in trees, it would destroy the animal and its eggs. I have forgotten what the liquid was and I have also forgotten whether it was in your paper or some other journal. May I trouble you to give me the name of the liquid? —M. B., Dixon.

The liquid was probably carbon bisulphide, but if you read anything commendatory of such use of it in the Rural, we must have been asleep that week. This injection will kill the borer in the burrow if you can find the hole to put it in, but it will not kill any eggs because boring larvae do not lay eggs in the hole. They transform into moths or beetles which attend to the egg-laying on the outside and every generation of borers has to do its own boring. There are some large borers which make burrows which can be entered with a wire or a squirt of bisulphide, but even they throw up earth-works behind them which are to some extent protective. The commonest borers make small burrows with obscure entrances. The best way to fight borers is to prevent them from getting in. This is done by whitewashing exposed bark to prevent sunburn in the case of the most common borer we have. Root-borers like those of the peach are prevented by using asphaltum on the root crown which keeps the young borer from entering the tissues. Twig borers are best killed by spraying with lime-sulphur just before blooming.

Shippers Co-operate, Growers Profit.

[Written for the PACIFIC RURAL PRESS.]

Much attention is paid to the recently very successful co-operative organizations of California growers, co-operation among the shippers has sometimes been decried as trust-forming. But there are several ways in which co-operation of shippers is a financial advantage to all the growers connected with them, and to consumers as well.

Up to about ten or twelve years ago, the California fruit grower disposed of his fruit in one of two ways: either sold to local buyers or shipped direct to eastern cities, including the auctions, to commission men on consignment. The distance of two or three thousand miles prevented the individual grower, or individual shipper, from keeping any kind of control, or making intelligent distribution, leaving it entirely in the hands of many commission men throughout the country, to dispose of as each saw fit, with the result that growers were kept busy making enough money on the side to pay the charges on fruit reported sold in the east for less than freight.

The urgency of the growers' predicament demanded a remedy. That remedy was not co-operation of the growers; such co-operation at that time lacked cohesion and brought anathemas on its promoters.

The remedy appeared in the evolution of the shipping company, which made a business of shipping fruit for the growers; either buying it outright to speculate or undertaking to ship and sell it for a commission on the proceeds. There were a number of such companies and they sold to the eastern trade f. o. b. California prices or through eastern commission men whom they watched in connection with their general knowledge of conditions.

Three functions must be adequately performed by the successful fruit shipper; he must gather for himself reliable and ever up-to-date knowledge of the supply and demand, present and impending, for fruit in every market he hopes to enter: he must gather for himself current knowledge of the amount of each kind of fruit in the whole U. S. and foreign countries available for shipment to those markets; and he must be able to get equity from the railroads such as the individual shipper so often found himself unable to do.

But the performance of these functions required money; and the limited capital of the shipping companies permitted them to do it only indifferently and inadequately at best. Each company trying to beat the other in the game, compelled a wasteful duplication of agents and correspondents in the East and crop reporters in the West, the cost of which was, of course, shifted to the growers in the form of decreased net returns.

But this was the least of the troubles of these dealers in a highly perishable product. Unable to foretell the amount of fruit other companies would ship to the same market the same day, because ignorant of the location and available supply of a given variety in the hands of their competitors throughout the State, shippers frequently and unavoidably placed their clients' fruit on an overloaded market and had to report to the growers losses at times when the fruit would have been in great demand in another place. The lack of proper distribution facilities among the competing companies made the grower the goat again. Inteligent distribution was then an utter impossibility.

Each company, then as now, had its own buyers offering prices to the growers for their crops. One would expect that in the sharp competition for business, prices to be paid for crops would be bidden up to the top notch. It is said that this was not the case: the prices were held far below what may be paid to the grower now, proportionately to what the fruit ultimately sells for, and again the grower suffered because of the competition of the companies.

All shippers had to count on uncertain conditions and buy accordingly from the growers. Of course commission sales had to come to the same level, prices being made by competition more than by supply and demand. Consider consignments to eastern markets: two or more dealers in any city, all sharp competitors, and possibly ill feeling existing between them, and all with cars of California fruit in their hands on consignment, had ample ammunition, furnished by the grower, with which to fight each other by cutting prices, if they were unscrupulous. Or possibly all would be forced into price-cutting by only one unscrupulous handler in the market.

Another loss to the grower under the old lack of system was the frequent inability of the shippers to supply markets where unreasonably high prices were being offered because most of the shippers had happened to consign to some other market on the same day. Of course, with merely great oversupply of fruit on one market, much of it went to the dump and most of that sold was at low prices, causing loss to the shipper, if he had bought it, or loss to the grower if it had been shipped on commission. With the resultant stampede of diversions, this market would be bare and high in a few days, and the slump transferred to another point.

Under the chaotic ignorance of quantities, destinations, and sensible distribution of perishable products, prices had to be low, less fruit was consumed, and much fruit on which freight had to be paid was lost by decay. Yet there were many times in various cities when fruit eaters had to do without, even though willing to pay high prices. "Red ink" returns to the growers were so common as to be expected.

The western growers, the eastern consumers, the shippers and dealers all needed badly a clearing house in which reliable information covering the whole field of the three functions named above would be available for instant use all the time.

To effectively gather and supply such information, covering the whole field at a minimum cost and with no duplication of effort; to advise where to ship certain fruits on certain days; to see that all markets get all the fruit they want without oversupply; to develop the hunger for fruit; to extend the sales to sections not before using California fruit; to meet a powerful influence in transportation controversies; to base f. o. b. and delivered prices on the auction values and supplies, thus giving confidence to the fruit buyers, most of the shippers co-operated in 1902 to organize the California Fruit Distributors, which now includes a dozen companies who control about 60 per cent of all deciduous fruit shipped from the State. The Association has succeeded remarkably well in gathering information and securing even distribution, and was instrumental in the reduction of freight rates to the East to a blanket rate of $1.15 per hundred pounds. We hope to tell more of their accomplishments in detail in a later issue.

COVER CROPS

Fenugreek
Melilotus
Burr
Clover
Vetches

produce humus and nitrogen in the soil — the two big essentials in groves and orchards. From our studies of the needs of the citrus belt this year, we are strongly recommending the following:
FENUGREEK: is a rank and rapid grower, producing successfully on poor soils.
MELILOTUS INDICA and BURR CLOVER are also adapted to heavy and poor soils as they produce a deep and heavy root system resulting in the breaking up and in the porosity of the soil.
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We cannot too strongly advocate the inoculation of seed for best results. Hundreds of our patrons testify that the use of

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Citrus Crop, 1913-1914.

[Written for the PACIFIC RURAL PRESS.]

The marketing season for the citrus crop of 1913-1914 is just closing, and the time for the annual reports to growers forming the various packing and marketing associations is at hand. From a money standpoint, the season has not been as good as could be wished, but where good judgment was used the average returns were a good deal better than was thought possible during the early spring months.

Returns for Fruit.—There were many weeks where it looked as though a net return of one cent per pound would be all that could possibly be realized, if indeed an actual loss was not sustained. Growers, after looking forward to these conditions, are having the pleasant surprise of being paid a net return of about one and one-half cents per pound for Washington Navels and two cents per pound for Valencias. Lemon growers did much better, the average being over three cents per pound.

I am speaking of the district with which I am in immediate touch, in and about Pomona, usually known as the San Antonio District. This district shipped during the past year 3644 cars or 1,400,000 boxes and will pay its growers 13 cents per box more than the average of the exchange sales for the whole of California.

The Year's Business.—The total shipments of California citrus fruit for the year just closing has been 41,682 cars, of which 2,675 were lemons. Of this amount, the Exchange shipped 24,942 of oranges and 2,431 of lemons. In comparing these figures with the largest previous shipment, which was in the year 1911 with a total of 44,365 cars, one condition should be taken into consideration, as affecting the grand total, viz.: There is a much larger hold-over of Valencias this fall than usual, and very much larger than was the case that year. This hold-over amounts to about 2,800 cars which will be nearly 1000 cars more than was ever held past September 1st before. This hold-over is caused by a slow market for citrus fruit and can be counted on to affect the fall market for early navels; if the Valencias do not move at a rate that will clean them out before Thanksgiving. These Valencias are in excellent condition, and of good keeping quality.

The Varieties.—In fact, it is safe to say that never before did California ship such good value in fruit than was found in the Valencia shipments this year. The color was a good yellow and held well, very little sweating being done, and that only on the second grade stock. The fruit was well filled with deep colored and very sweet juice tending to make a very desirable and good eating orange. Yet in spite of this, the market was very susceptible of overcrowding and the resulting prices very easily brought down.

The Washington Navels were in an equally delicate position as regards fluctuating markets, and slow demand, although the fruit was exceptionally good to eat. There was some handicap by the competition of the largest and best crop that Florida ever sent to market. This was further accentuated by the fact that a quite severe decay showed at times in the California stock, making the trade somewhat shy of taking hold of more fruit than could be sold quickly.

This decay came largely from the orchards; in many cases considerable rotting and mould development was found before the fruit left the trees, and in all cases developing very rapidly for the first two or three days after picking. This condition seems to be largely chargeable to the very moist weather and was only found in navel oranges.

The brown rot of lemons which is usually so prevalent in moist weather was not much in evidence and lemons kept through the curing stage in excellent condition.

Lessons on Shipping.—The condition of the citrus markets previous to April was a good evidence of the futility of rushing fruit to the consumer faster than the trade can dispose of it. At nearly all times there was on track and in transit enough to keep the market supplied for three weeks. In other words, we were forcing our own produce to lay waiting for consumption a week or more after arrival, because we persisted in picking a week or more before the market could possibly take it. This made us compete with our own fruit as well as that of Florida, and of course, the results were felt in the low prices. The shipments were held generally to about offset the sales each week, but the supply on track in the East was about one week ahead of the consumption all the time.

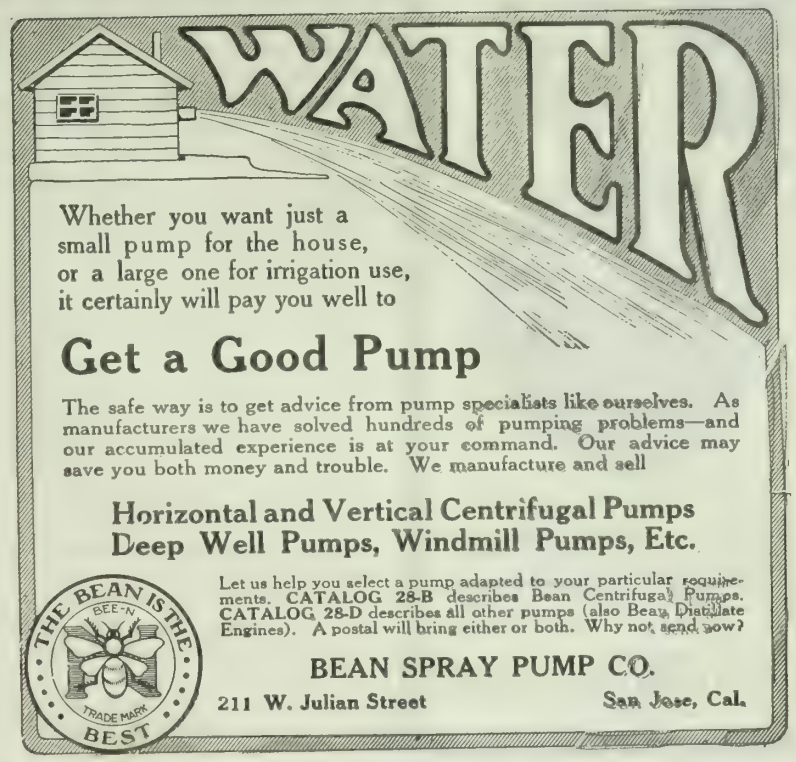
This should lead growers and packers to pay more attention to regulating the supply to suit consumption and making a sacrifice of the lower grade fruit, at this end, instead of after the packing and freight charges have been added.

The foolishness of making a number of grades seems to have been seen this year, and many packers are giving up the plan of robbing an extra choice grade to make a "fancy" for which no more was realized than for good extra stock, a robbery which was carried on through the various grades. Better make two good, dependable grades than to subdivide along the line from fancy to standard, the latter being too low to sell, and the former too select to pay when less than ten cents per box premium is paid for the select stock.—J. E. Adamson.

WHITE ANTS ON ORANGE BARK.

To the Editor: I have discovered a small white bug which is destroying orange trees by eating underneath the bark and gradually going up the tree, thus causing the tree to lose its bark. I send you some of these bugs. Could you tell me how to destroy these bugs.; and could you tell me what causes them? They generally start at the surface of the ground.—E. F. M., Germantown.

Your pests are termites or white ants. They are apt to be found on various fruit trees but we get most complaint concerning citrus trees. They do not hesitate to mine into living bark and wood and they make a very clean job so far as they choose to go. They generally work from the ground up. You can kill them by plugging any burrow you can find wtih cotton soaked with carbon-bisulphid or, when working on root crown and adjacent, you can put a plug of cotton and bisulphid where you find them covering it over with soil. Do not pour in a lot of bisulphid, for you might injure the tree.



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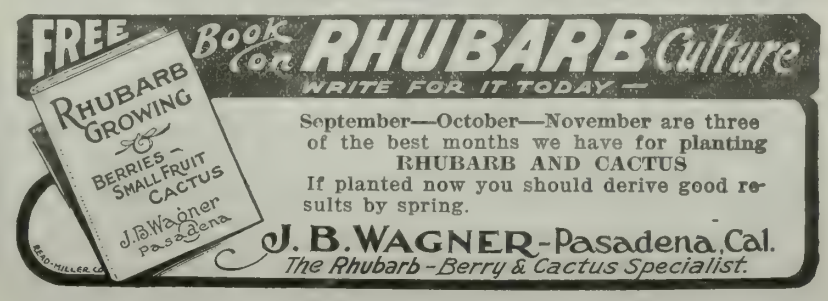

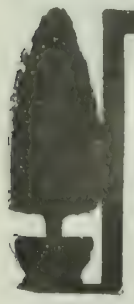

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160 Eleventh St., San Francisco.

Watering Peaches After the Crop.

[Written for the PACIFIC RURAL PRESS.]

On 150 acres of cling peaches planted six years ago on sandy soil near Atwater, and not watered for four seasons, almost everything was watered about June last year, and about 10 acres was irrigated after the crop was off. The crop on this ten acres this year is bigger, better where only one irrigation was given. The trees are at least a year bigger and the foliage immensely better.

This is true, also, of a row next to an irrigation ditch where there is more or less seepage, while the trees in a section next to these are more or less dead, yellow, diseased, and practically all stunted. The exceptions in this lot are indivduals which seem fairly thrifty under apparently the same conditions as the trees around them.

The place is operated by L. S. Nickerson and his partner, J. H. Lupton. They now have ready four wells and in a week or two when the canning crop is out of the way, they will water the whole orchard thoroughly to enable the trees to recover from the exhaustion of fruit bearing and to set new buds for the next year's crop. This is along the line of C. E. Trapp's philosophy and practice near Los Angeles as recently mentioned in these columns. It is also practiced by many of those in the Santa Clara valley who get annual crops of fruit.

The soil about Atwater is sandy and blows in the fall winds, which is an additonal reason for keeping it wet till the rains come.

An interesting point here is that the trees suffering for water are within 10 to 20 feet of the water table which it seems they did not reach in spite of the lack of surface irrigation. The fact that they are on the lowest ground of all the orchard might suggest the need of drainage rather than irrigation, were it not for that row of trees along the ditch at their lower edge, which have grown so thriftily.

Sam Clough, managing a 135 acre fruit ranch for Landan and Clough of Atwater, will begin to irrigate his peaches about September 1, by the time all of his Phillips are off. His orchard is on sloping land, making it necessary to check the water back and forth between the trees, in order to get the upper side wet enough by the time the lower side is soaked. It will take a month to irrigate the whole orchard, but a day or two after the water is turned off from a section, a plain harrow run over it twice in different directions will cultivate the sandy soil deep enough to hold the moisture. This orchard was well watered in June, a million gallons a day having been applied for 5 weeks. The Phillips and Muirs were watered once after that. Pruning will commence in November.

FRUIT GROWERS' EXCHANGE WORK.

Report for Year Ending August 31.
By G. Harold Powell.

Eleven million, two hundred and sixty-two thousand, one hundred and eighty-five (11,262,185) boxes of citrus fruits have been shipped through the California Fruit Growers' Exchange during the year ending August 31, 1914. This includes 10,156,724 boxes of oranges and 1,105,461 boxes of lemons, which makes a total of 28,193 carloads. The Exchange shippers have sold 3.8 per cent more boxes of citrus fruit than in any previous year. The Exchange members have forwarded 61.9 per cent of the citrus fruit shipped from California, which is the largest per cent of the total crop handled through the organization.

The Money Received For the Fruit.

The money returned to California through the Exchange amounts to $19,246,757. This makes a general average of $1.71 per box, f. o. b., for every box shipped. The delivered value of the Exchange fruit is $29,434,402.40. In one year only, 1910-11, has the amount of money returned by the Exchange to California been exceeded.

The Cost to the Exchange Shipper.

The operating cost to the shipper who utilizes the facilities furnished by the Exchange, including the salaries and entire expense of the 70 selling agencies, the maintenance and expense of the general office in Los Angeles, including the general manager's and assistant general manager's offices, the sales, traffic and legal departments, the cost of the daily telegraphic market-news service, and all other operating departments, the Exchange share of the expense of the Citrus Protective League and all other expenses, is approximately 4 1-4 cents per packed box. This selling cost represents 1 3-5 per cent on the gross sales.

In addition to the operating cost, the Exchange has expended 1 1-2 cents per box for advertising its leading brands, or 3-5 of one per cent of the gross value of the fruit. This advertising expense is partly an operating cost and partly an investment for the sale of future crops. This makes a total cost of 5 3-4 cents per box, or 2 1-5 per cent on the gross sales.

While not a California Fruit Growers' Exchange expense, there should be added to the marketing cost 84-100 of 1 cent per box, which is the average cost which the grower paid to maintain the sub-Exchange during 1913-14.

This marketing cost, including the cost of advertising, which has been made possible by the co-operative efforts of the 6500 growers who conduct their operations at cost without personal profit to any one, is the lowest cost of marketing an agricultural crop anywhere in the world. Illustrative of the low cost of the Exchange service to its members, it is interesting to note that the salary expense of the Los Angeles office, including the general manager and assistant general manager, traffic officers, attorney, cashier, sales agents and all assistants, including an average of 50 employes, is 3-5 of 1 cent per box.

The Taffic Department.

The Exchange shippers have been paid $108,428 for overcharges and breakage and damage to fruit in transit, the cost of which is included in the selling expense of 4 1-4 cents per box.

The Exchange shippers have been paid $343,744.88, the refund of excess charges collected by the Citrus Protective League, with interest, at the termination of the lemon rate case. The League expense is included in the selling cost.

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For good roots, thrift, and hardiness they can't be beat. Quality considered they challange all competition. We are prepared to furnish the best of everything — Olive, Almond, Peach, Pear, Plum, Prune, Apricot, Cherry, Apple, Walnut, Grape, Quince, etc.

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300,000 PRUNES	25,000 CHERRIES
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The Present Walnut Situation.

The following circular was recently sent by the California Walnut Growers' Association to their customers:

Uniform Weights.—In line with our policy of co-operating in every way possible with the trade, we have now decided, as a result of many requests from our customers, to hereafter pack all bulk walnuts in even net weight 100-lb packages. This will greatly simplify your billing, etc., and is bound to prove a great convenience. All bags will have the words, "Net weight 100 lbs. when packed," plainly printed under the Diamond Brand.

Crop Conditions. — No material change in crop prospects has developed since our last advices of July 3rd. Weather conditions have been favorable. An unexpected premature dropping of slightly "blighted" nuts has recently occurred which will lower our former crop estimate about 5 per cent. Our prediction is now for about 10,000 tons for California. It is well that this dropping has occurred early, as these diseased nuts will therefore be out of the way when harvesting commences and the nuts which are harvested should all be of excellent quality. Shipments still promise to be fully ten days earlier than usual. First droppings show up at least 90 per cent light-colored meats, and barring the remote possibility of a freakish hot spell within the next two weeks, the percentage of dark meats this season will be infinitesimal.

Effect of War on Importations.—France has placed an embargo on shipments on all food stuffs. This includes walnuts, of which she is by far the largest exporter. If the war continues throughout the fall, as indications now point, it will be difficult to secure imported walnuts from any European source in time for holiday requirements. The best Manchurian walnuts are produced in the Shantung Province, China. Kiao-Chow is the port of shipment. This port is now being besieged by the Japanese, whose operations are expected to continue for several months. Germans control many of the railroads in Shantung Province. It, therefore, is not expected that shipments in quantity will be moved from Chantung Province until the blockade of Kiao-Chow is lifted. California must therefore be relied upon to furnish practically the entire holiday supply. The California production of walnuts supplies only about 40 per cent of the average consumption in the United States. A serious scarcity of walnuts can therefore be anticipated. Since the outbreak of hostilities in Europe we have been "swamped" with requests to accept orders "firm at opening prices, whatever they may be" by jobbers who have been counting on foreign walnuts to fill their requirements and by some of our regular trade who had ordered short. In order to protect our friends who placed S. A. P. orders with us early, we have had to universally pass all new business. Our regular customers can therefore be assured of their usual supply of good California walnuts and we believe they will make a good profit on their purchases.

Opening Prices. — Opening prices will not be named by us until we are about ready to make shipments. We believe the trade will approve this policy, as it will give buyers an opportunity to know of the exact foreign trade situation at about the time their goods are ready to move—thus eliminating, to a great extent, the speculative feature. No definite date for naming our opening prices has been determined, but the date will undoubtedly be fixed between Sept. 20 and October 1.

New Pack in Small Bags.— We have recently received a great many orders for Diamond Brand walnuts packed in 4-pound bags at 1c a pound premium over bulk goods. This small package is going to be a winner with the consumer. The supply is limited. Our broker can give you full information regarding the advisability of switching a portion of your present order to this new pack. Better see him at once.

Before we name our prices, we will place fully before you all information we can gather regarding both foreign and domestic conditions as affecting the walnut industry. We have salaried agents in Europe who will keep us reliably informed as to conditions there.

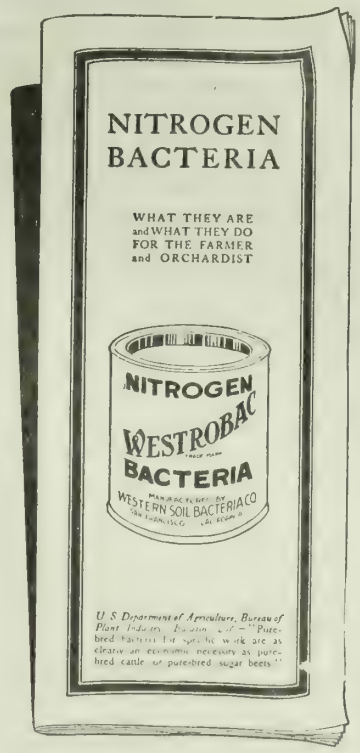
IN THE LAND OF PLENTY
where wheat yields 50 to 75 bushels an acre; where barley produces 50 to 80 bushels; where wheat commands $2 premium per ton; where alfalfa is sold to spot cash market on the field; where 30,000 head of cattle are fattened each winter, and where there are 26,000 acres now producing these yields. YOU CAN NOW HAVE 40 OR 80 ACRES OR MORE WITH WATER FREE, at price and terms where land will pay its cost in two or three years. The right opportunity now. Catalog of 40 views of this land on request.
C. M. WOOSTER
PHELAN BLDG., S. F.

LABELING ALMONDS.

[Written for the PACIFIC RURAL PRESS.]

Almond retailers in the East notice the quality of goods they buy. Some are rather questionable, but there is no way of telilng how to avoid them except by insisting on nuts from certain growers or packers. If the sack in which they come is labeled, and the goods are uniform in size, variety, color, soundness, and sweetness, they and their customers call for nuts shipped under that brand. Such a trade builds itself up, simply by means of the label; and the demand for that brand is felt back through the retailer, the wholesaler, the jobber, the California Almond Growers' Ass'n, to the grower, who therefore gets best prices in times of scarcity and is sure of selling his crop when there seems to be overproduction.

Realization of these rather evident truths has led some growers to adopt their own distinctive brands. Among such brands is one in which the words "Grown by P. D. Bane without Irrigation" are stenciled in a circle on each sack and within this circle is the name of the variety and the words, "Orland Almonds, Glenn Co., Cal." Since Mr. Bane is careful in grading and handling his almonds, and since he dries them thoroughly before sulfuring, it is safe and profitable for him to use such a label.



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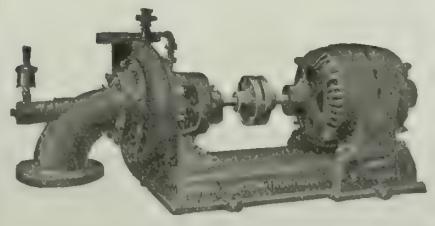

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Constructive Agriculture---No. 35.

QUICKER AND BETTER RAISIN DRYING.

[Written for the PACIFIC RURAL PRESS.]

Ever bite a raisin that had some gravel in it? That's the fault of the rancher who allows dirt to get onto the raisins, or raisins to get into the dirt. Sometimes they allow the men to turn trays for speed records. A. Thiele, of Fresno county, says that turning 3,500 trays is a fine day's work for a pair of men, but some folks claim 4,000 to 7,000. Such fast turning means a lot of bunches spilled out to be picked up with dirt sticking to them. It means also much dirt from the tray bottoms when turning and stacking. It means more or less sand kicked onto the raisins both by the feet and by the turning trays. Most of this might be left behind by carefulness when dumping from the trays into sweat boxes.

The seeding and cap-stemming machines don't take out the gravel that is pressed into the meat. And you wouldn't buy raisins that are habitually gravelly.

It doesn't pay to pick unripe grapes for raisins because they shrivel away and take a poor reddish color. A few days more for them to sugar would make meaty, high-quality fruit. According to H. W. Piper, chief raisin inspector for the Associated Raisin Co., they ought to be tested for sugar before picking begins and should show 22 per cent. Mr. Thiele makes it stronger, saying 28 to 32 per cent of sugar. He probably gets much more weight by waiting that much longer. But as experience in Fresno county dictates that Muscat picking should begin Sept. 1 on account of danger from rain, the sugar content is not the usual guide for time of picking. All grapes are more or less dusty when picked, and dust collects in the folds of the dried berries. If it gets wet it sticks and adds weight, but people don't like to eat dried mud. Besides, rain knocks the bloom off; and if it stands on the raisins, they mold quickly.

In proper drying weather (90 to 100 degrees) Muscats ought not to be exposed more than ten days. D. R. Olliver of Merced exposes Thompsons two days, till they are turned over and the other side exposed about five days; then they ought to be stacked, usually about 20 trays high, somewhat undercured. In the stacks they may stand two weeks, if watched so they won't dry out too much. In this shape they can be protected from rain, so it is quite desirable to wait as long as possible before picking and then dry them as quickly as possible. Slow drying may make slightly better quality if no trouble comes, but no difference in price to the grower is noticeable.

Mr. Thiele, who wants about 30 per cent sugar, has a quick way of drying which works very satisfactorily. After clipping off the long vines reaching out between the rows, he runs down every third row east and west with a V-shaped ridger which leaves the hot dirt in that row ridged up with a three-foot slope toward the south side. Picking is done by contract with Orientals in this district at 2¼ cents per 24-pound tray. The trays are laid on this so the whole surface is square against the sun; and in unfavorable weather he saves a week in the drying. If he is in a special hurry, empty trays are set up on the north side. These reflect some heat also and help along. The heat from the ground also has its effect on the underside of the grapes.

A day or two after the trays are turned, Mr. Thiele has men go down the rows to "double up." Such trays as are drier than others are covered by setting greener trays on them.

Owing to weather differences, no set length of time can be given for drying raisins. Last year it took a month. One year it took only 11 days. But when dry enough to put into the sweat-box, no juice will squeeze from them and they are of an attractive blue black color with all the green off. They feel meaty. If not, then they are too hard, and have lost weight for which the grower ought to be paid. They can not be sprinkled to restore plumpness, so the expedient is suggested by Mr. Piper of letting them stand in the stacks till moist weather comes, when they will absorb enough from the air.

Until the Associated Raisin Co. assumed control, "tray slipped" raisins were put into the 2-crown grade. Three whole trayfuls would be slipped into a box, then a paper, and then three more. Very few such are now packed.

Mr. Thiele handsorts the bunches as they are emptied from trays into sweat boxes and blows the dust from the "layer" or "cluster" bunches with a bellows. These are the largest and best berries, and are not so dry as the smaller ones. He gets $7.50 per ton more for the hand-sorted raisins, so they pay extra both in weight and price.

This season having been particularly favorable for mildew, Mr. Piper, who inspects whatever fruit is objected to, wishes to warn growers not to pick mildewed grapes for raisins. The whole crop may be rejected from the standard grade if mixed with mildew, for it would be a severe task to separate them after they are dried. Experienced packers can tell mildewed raisins by the color, and they do not care to hazard the reputation of their brands by the mixture.

As a rule, however, about 80 per cent of the crop is accepted without objection. They may be, and are, held several months in the sweat boxes without injury if kept dry and away from vermin. It improves their quality some, though the fresh raisins are accepted as freely as the sweated ones.

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GRAFTED FRANQUETTES—Vrooman Strain.
Non-Irrigated. Grafted on 2-year-old California Black Walnut extra large lateral rooting. Scions from my 35-acre bearing orchard at Canby, Oregon. Trees from 5 to 9 feet high. Please state when writing number of trees wanted. Prices according to number and size of trees. Address Dr. F. H. Walgamot, 602 Medical Building, Portland, Oregon.

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ABSOLUTELY GUARANTEED against NOXIOUS WEEDS and for GERMINATION
We advise ordering early. Every indication points to a sharp advance before January 1st.
We will accept a deposit of 20% to accompany order and place same at this time, to be delivered to you on or before November 1st.
Advice, Prices and Samples supplied on application.
25 years experience in the culture of Alfalfa—NUF SED.
V. A. PETERSON ALFALFA SEED CO.
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The only exclusive Alfalfa Seed Dealers in the West.

Ready for Delivery, August 10th.
IMPORTED BERMUDA ONION SEED
1 Pound, $1.50. 5 pounds, $6.75. 10 pounds, $12.50. Postpaid.
Special prices on larger quantities.
Plant early to get an early crop and good price for onions. Prices on other onion seed upon request.
SEED PEAS
AMERICAN WONDER—PREMIUM GEM—YORKSHIRE HERO—NOTT'S EXCELSIOR—TELEPHONE—GRADUS.
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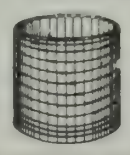
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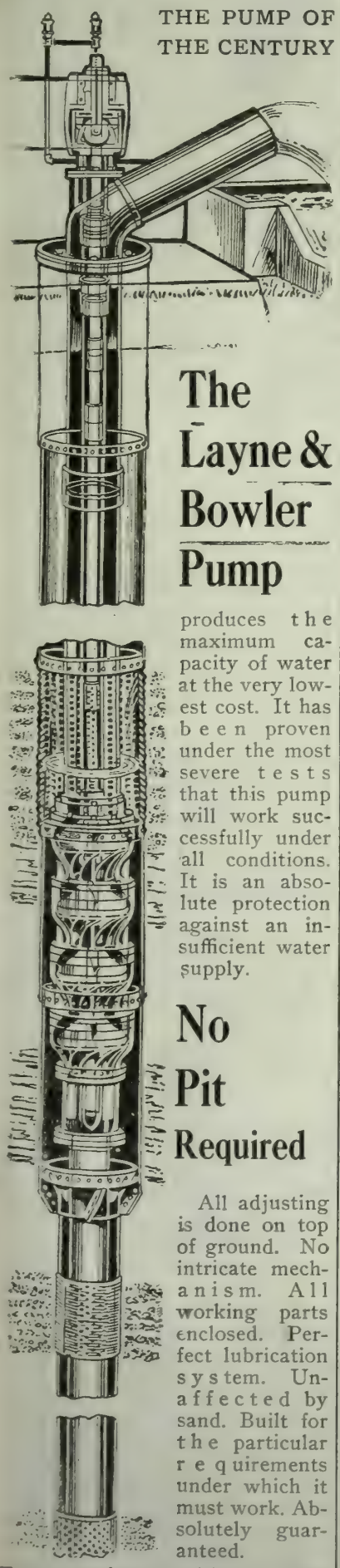

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Farm Vinegar Making.

To the Editor: Through the columns of your paper will you please give directions for making cider vinegar? I have tried but without success. We have a few apple trees and I want to make use of the fruit. —E. B., Fresno.

Cider vinegar can be made on any farm or in any household with but very little trouble. While easy to make there are many failures, all of which are due wholly to carelessness or ignorance of a few simple things. After the cider is made it must go through two distinct kinds of fermentation before it becomes vinegar. First it must become "hard," or alcoholic, and second, the alcohol must be turned into acid. Where apples are to be made into vinegar they must be fully ripe, clean and not rotten or worm-eaten. Ripe apples contain the greatest amount of sugar, and it is sugar which is eventually turned into the acid vinegar.

Squeeze out the juice of the apples in a cider press using as much pressure as possible. Pour this into a clean barrel and set where it will not freeze or become too warm. A good frost-proof room is the best place. As soon as the juice has been pressed it begins to ferment, and after standing two or three days it will be bubbling in a lively manner in the first fermentation. This fermentation is caused by yeast, the same kind of an organism that makes bread rise. Here it is that the sugar of the cider is changed into alcohol. A gas is also given off and in its escape it causes the bubbling characteristic of this fermentation.

While this yeast is at work, keep the cider cool. A temperature between 60 and 70 degrees is best, as then the alcohol formed in the fermentation will not escape as it will when the cider is warmer.

In the course of three to seven weeks this first fermentation will have been completed, and there will be little or no bubbling of the juice. It is in this condition that cider is called "hard," as the sugar has not yet developed into the acid stage. It is then ready for the second fermentation to begin.

This second fermentation does not take place with the bubbling that is characteristic of the first. It goes on quietly, and instead of being caused by yeast, it is done by bacteria. These bacteria are, of course, very small, but they collect into such great masses as to make a thick leathery skin over the surface of the juice. They feed upon the alcohol of the hard cider and change it slowly into the acid of vinegar. It takes at least a month for the first fermentation to be completed, but takes six months more for the hard cider to become a good grade of vinegar.

At this stage is where many failures are made in the home manufacture of vinegar. It is necessary to keep the barrel or other vessel in which the vinegar is made open all of the time. In the first fermentation this is necessary to allow for the escape of the gas which is formed. In the second, it is needed to enable the bacteria to oxidize the alcohol. If a fruit juice is placed in a tightly sealed vessel as soon as the bubbling has stopped, it will remain as hard cider or wine. But if exposed to the air, by leaving the bung or cork out of the vessel, the bacteria convert the alcohol of the juice into vinegar.

In making vinegar from apples there are several things to bear constantly in mind. These are: First, to avoid the use of rotten, wormy or dirty apples, as these all spoil the flavor and aroma of the vinegar. Then too, rotten apples carry with them many organisms which interfere with the fermentation of the cider.

Second, after the juice has been pressed, put it where it will be no warmer than 75 degrees, and not colder than 60 degrees. A violent fermentation will take place, and if it has not started by the third day, soak up a little bread yeast and pour into the barrel. This yeast changes the sugar of the fruit juice into alcohol, making "hard" cider.

Third, another fermentation begins as soon as the bubbling has stopped, being caused this time by bacteria. No bubbling appears with this fermentation, but results in the formation of a leathery skin over the surface of the juice, and called the "mother of vinegar." Don't break this skin. If the cider has been kept at too low a temperature the mother may be very slow in forming and may need a starter. This can be done by placing a little "mother" from old vinegar on the surface of the hard cider. In case the mother is not obtainable, it can be made in a few days by mixing equal parts of hard cider and vinegar in a shallow pan and keeping it at a temperature of about 80 degrees. In a few days a coating of mother will appear on the surface and should be floated carefully on the hard cider.

Fourth, do not cork the vessel after the mother has begun to form. Let it have air, as this is needed by the bacteria in changing the alcohol of the hard cider into vinegar. Where the juice is in barrels, a piece of cheese cloth may be tacked over the bung hole, to keep out the gnats and flies, and still admit air.

Fifth, do not fill the barrel within six inches of the top when the second fermentation is begun. Have a large surface of the liquid exposed to the air and action of the mother.

No pure cider vinegar will keep long in vessels exposed to the air at a temperature above 60 degrees. Vinegar eels are sometimes troublesome in vinegar barrels. To remove these heat the vinegar scalding hot, but do not boil. When cool, strain through clean flannel and the eels will be removed.

In making cider vinegar, the strength of the product of per cent by weight of the acetic acid in it, will be a little less than the per cent by weight of the alcohol in the cider. A little of the alcohol remains unfermented, and serves to give the desired flavor or bouquet to the vinegar.

There is another and even more rapid method of making cider vinegar. In this method the fermented cider, or hard cider, is run through a box of beech-wood shavings, wetted with old vinegar. By this method, good vinegar may be made in 24 hours. But the process described above makes better vinegar and is preferable for farm use.

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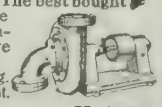

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Agricultural Review.

The great State Fair is now on. Those interested in livestock will notice marked improvements over last year in the number exhibited and probably in the quality. The horticultural building housing county and community exhibits had all space reserved long ago and now shows up the best of California's products in that line.

Along with the increased interest among exhibitors and visitors will be noted the temporary quarters and insufficient accommodations supplied for both.

If the State Fair is of value in encouraging our young farmers to observe the best points about the agricultural products they raise, and if it is valuable as an advertisement of the State's resources, and if the sight of all this inspires the visitors to practice better agriculture when they return home, and if the State Fair is to remain at Sacramento, then it is entitled to the ample support of the State to forward these objects and for no other objects but the betterment of California agriculture.

That the women of the farms are of great importance in this line is being more and more recognized, both by increased and more varied premiums on things in which they are interested, and in arrangements for their comfort. One of the great needs of our State Fair is a women's building fully equipped with all modern comforts and conveniences and a nursery where small children may be cared for. This and many other improvements are not made because the Fair management lacks money. But if they were supplied with money, it is not known whether they would first improve the agricultural features or the amusement features of the Fair.

The rice and agricultural show held last week-end for four days at Gridley, celebrates the growth in three years of rice growing on 50 acres in Butte county, to the present season's 15,000 acres producing an estimated million dollars' worth of the cereal.

In addition to showing all phases of rice production in miniature by exhibits and displays, and in reality by trips to the fields and mills, several tents were set aside for vegetable, fruit, machinery, livestock and pountry exhibits. There were 200 displays of rice and vegetables and 205 head of stock, and 180 entries of poultry and pets. Nearly 300 prizes were awarded—not bad for the first show of its kind north of Mason and Dixon's line. Interest was high, as the show was loyally supported by the local newspapers of Butte county. The successful introduction of rice here is largely due to Federal government experimenters who were at hand with advice and lectures.

The Truckee-Carson fair which is to be held Sept. 14 to 20 is to have an exhibit from the Nevada Agricultural College.

Mariposa county farmers and their wives are holding a week-end get-together fair Sept. 11, 12 and 13 at Jerseydale to talk about good roads, neighborliness, and other agricultural interests. The fair grounds are covered with pine and cedar trees, ideal for camping.

Ten students of the Hollister High School Agricultural Club, fostered by the University of California, have about finished a tomato-growing contest and on Sept. 15 will display their fruit for inspection and judgment by the county horticultural commissioner, a wholesale seed grower, and a fruit canner. The winner gets a trip to Washington, D. C. The losers get a trip to the agricultural college farm at Davis, so they are not losers after all.

While the Farmers Union in the upper Santa Clara valley was receiving reports indicating shorter prune crops than were expected, the ranchers in the lower part of the valley were harvesting exceptionally good crops for this year. At Chico prune packing will soon commence to supplement the work on dried peaches. The peach and prune market was reported inactive but prune shipments were made last week from Santa Clara valley to Holland, while shipments to Holland and England of dried fruit, principally apricots, was resumed by the Southern Pacific after six weeks of no such consignments. In this, however, the shippers take risk of capture. It is said that half of our dried apricots are normally used in Europe. Since the crop is about 9,000 tons this year, early shipment is important.

The threatened rain of last week which scared the thousands of ranchers who had fruit out drying, did not come very extensively, and the clouds are credited with an improvement in quality of the fruit, especially Thompson raisins, because they dried more slowly than usual. On the other hand, Sutter county plum driers fear the fruit will spoil unless hotter weather comes.

Canneries are closing their fruit seasons, two new departures having been made at the Tulare cannery in adding tomatoes and grapes to their list. The tomatoes were a good proposition, 23,000 cans having been put through in the first day. Over a carload of Muscats were put out with all promise of success.

The slowness of dried fruit led the secretary of the San Jose Chamber of Commerce to investigate the prices of fresh fruits in the mountain country where he found unduly high prices being paid for fruit such as has been rotting in Santa Clara orchards for lack of markets. He thinks express arrangements could be made to ship them in crates at a good price.

A plum grower of Sacramento is said to have taken 980 crates of Wickson plums from 350 trees which, after paying $25 for pruning, $47 for four plowings, $25 for lime-sulfur spray, $28 for picking, $39.20 for packing, $114.45 for crates and baskets and $15 for hauling to wharf, netted him $441.35 profit.

This may be accepted as truthful, but not typical, though a Butte county paper bases a boosting editorial for that section on the performance of two-year Diamond and Duke plums at Wyandotte which this season bore relatively heavy yields

The president of the Sebastopol Berry Growers' Association returned from the East with a report of easy selling of the 68 cars shipped East by that association, and the fine condition in which they arrived, just in time to view the burning of the whole plant at Sebastopol. This included a berry precooler installed two or three years ago at a $6,000

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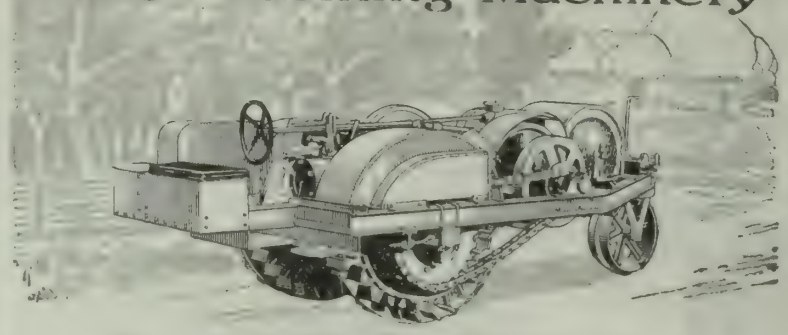

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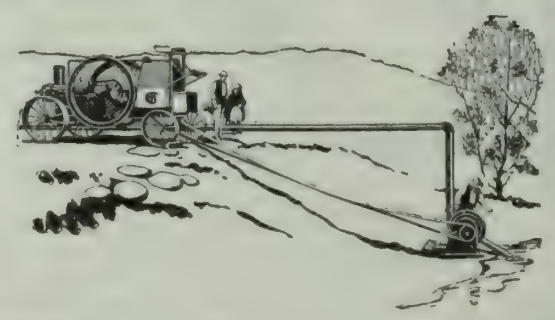

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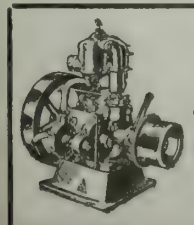

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cost, which was partly responsible for the good condition of California blackberries, red raspberries and Loganberries on eastern markets after a week on the road. The crop of blackberries was about all picked, having proved somewhat smaller than last year.

"There are now enough Muscat, Thompson Seedless, and the regular varieties of raisin grapes grown to produce all the raisins that can be consumed in the United States," writes Manager James Madison of the Associated Raisin Co.

Fresno fig packers are finding some difficulty in supplying the fancy grades to fill orders. One packer recently sold 100 tons at 5⅛ cents f. o. b.

Tulare county oranges are maturing and coloring early this year. The olive crop appears to be nearly as much earlier than usual and exceptionally heavy.

The date scale has showed itself serious on a date orchard in Coachella valley and is found rather widely scattered but less serious. The trees are topped and scorched with a blow flame. In years past they were fumigated, but this is a big job with such trees.

Good demand for almonds is indicated by the following letter from Manager T. C. Tucker of the Cal. Almond Growers' Association: "We wish to advise that our entire crop of Nonpareil and Ne Plus is sold and we, therefore, withdraw quotations on these varieties. Our entire supply of shelled almonds is also sold. We expect to clean up the remaining varieties in a very short time. Shipments of the earlier varieties will commence next week and all orders will be filled as fast as goods are delivered to warehouses." The quotations were considerably higher this year than last. Sutter county reports the biggest crop ever.

Aphis and blight have reduced Ventura walnut crops to some extent.

FEEDING CUTWORMS ON FILAREE.

To the Editor: Where can I buy alfilaria seed and what does it cost per pound? Would it be a good plan to sow this seed close to grape vines so cut worms would feed on it in the spring instead of buds? Has any experiment been carried out along this line? I have always noticed that they lie around under the leaves of alfilaria. — Subscriber, Fresno.

(Alfilaria seed is to be had from seedsmen for $1.50 per lb. It is very hard to gather and very light. Even if it did act as you say, it would cost you a lot to dig the vines out of it and get the land into good cultivation. We have never seen this sort of a trap tried, but we seriously doubt if it would accomplish anything. We would prefer to keep the vineyard clean and feed the cutworms on bran and arsenic.—Editor.)

PIMIENTOS AND QUINCES.

To the Editor: Will you please give me a recipe for canning pimientos?—Mrs. J. T. F., Hughson.

(Our readers need recipes that have been used to advantage by others, especially if they show new and attractive ways of preparing food. Another timely subject is the preparation of quinces, a tree of which is to be found most anywhere in California wasting fruit that would help wonderfully in winter when company comes. Will some of our good cooks respond with their best recipes?—Editor.)

KEEPING CIDER SWEET.

To the Editor: Would you kindly tell me how to keep cider from turning to vinegar?—L. J. DOWLING.

(The easiest way is to heat to boiling and can as you would fruit. This gives the cider a cooked taste. This is avoided by proper apparatus for Pasteurizing which kills the germs at less than boiling temperature and preserves the natural flavor. In this process the cider is bottled immediately. We know no way in which cider can be kept sweet in bulk although certain agents are sold for that purpose and do to some extent prevent fermentation.—Editor.)

CARE OF DRYING TRAYS.

Landan and Clough of Merced county have 5000 trays, all of which they used this season in drying fruit. As soon as the fruit was off, they hauled the trays to a big irrigating ditch and soaked them there two or three hours, holding them from floating away by a heavy plank thrown across stream. Being made of pine, they float, and the boys in old overalls and bare feet had a cool job in the shade of big poplars walking around on the floating trays to keep them all soaking. When the fruit juice was softened thoroughly, it was scrubbed off with horse curry brushes, and the trays were stacked clean and ready for next season.

POTATO TROUBLES.

To the Editor: Can you tell me why some potatoes all grow to top and have a great number of diminutive potatoes that also sprout and grow more small potatoes? How are good seed potatoes grown?—A. C. G., Concord.

(Excessive top growth of potatoes is generally due to over-stimulation of the plant during its early life. This may be due to excessive use of stable manure (or other nitrogenous manure, but especially the former); and sometimes to the lack of adaptation of the variety to the local conditions. Where this excessive top growth occurs small potatoes form but are not adequately enlarged by return flow from the top in process of maturing. The reason why these small potatoes take to sprouting instead of enlarging as they ought is due to the fact that the plant starting vigorously with too much moisture became afterwards too dry and then starting again caused the small potatoes after becoming abnormally checked in growth to break out with secondary tubers. The way to grow good seed potatoes is exactly the same as growing good potatoes for eating: by good prior tillage, sufficiently deep planting, constant cultivation to retain regular moisture in the soil (and by irrigation during the normal top growth if necessary); then when tubers are well formed, stop irrigation but cultivate to prevent the soil from too sudden drying out and to keep the tuber well covered from exposure to the sun and the potato moth until it is fully matured. Select seed potatoes not alone by suitable size and form of individual tubers, but from hills which bear the greatest number of such tubers. It should be a question of hill selection as well as tuber selection when one is working on a scale which allows him to exercise this greater effort. Of course too little attention is paid to such careful selection for seed purposes. We have sometimes seen potatoes sold for seed which were not respectable pig feed.—Editor.)

Irishman (at telephone): "Send me up tree bales of hay and wan bag of oats." Feed Dealer: "All right. Who for?" Irishman: "There now, don't get gay. For the horse av course."

CLASSIFIED ADVERTISEMENTS

Rates 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

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VICTORIA, AUSTRALIA, WANTS SETTLERS. Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

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READ my advertisement on another page. I have just what you are looking for in lands. G. M. Rea.

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IT PAYS TO KEEP BEES on the farm; raise your own honey, make considerable profit besides. We can supply gentle Italian bees at $3.50 for five-frame colony, $5 for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. SPENCER APIARIES CO., Box 12, Nordhoff, Cal.

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YOUNG LADY of good character desires position on farm. House work. With plain, kind family. Object a home. Box 315, Pacific Rural Press.

WANTED—Working foreman for hay and stock ranch; must understand general farming. Experienced up-to-date man needed. References required. Address Box 297, Yreka, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

WANTED—Dairyman to run large dairy on shares. Box 124, Pacific Rural Press.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50 per cent. of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

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County Fair Directed by Farmers for Farmers

[Written for the PACIFIC RURAL PRESS.]

If there is one county fair in the State that deserves the title and glory of being an agricultural carnival, festival, show, or whatever you wish to call them, it is the one to be held at Pleasanton, Alameda county, September 23 to 27.

Such was our conclusion after having spent considerable time with the men at the helm of this agricultural ship, who not only believe in the agricultural future of their county and district, but who are investing money and labor in an effort to develop that county and district by bringing the farmer to a farmer's show.

It is a favorite boast of the stockholders and directorate that the fair was started, and has for the past two years been directed, by a man whose sympathies are entirely with, and for, the farmer, E. E. Hall of Pleasanton.

Now while Alameda county contains the third largest city in the State, in Oakland, and also supports a large population in other cities and towns, she also has 311,327 acres of agricultural land, much of which has become noted for its productiveness.

The agricultural interests of the county are of a varied nature, the principal crops and their most suitable locations being as follows: prunes are best from Irvington to the boundary lines of Santa Clara county, although some are grown around Hayward and Niles; apricots are mostly grown from San Leandro to Warm Springs, from the hills to about halfway to the bay; cherries are grown quite extensively from San Leandro to Irvington, about half way from the hills to the bay; pears in the county come largely from the section between Haywards and Niles. Among the smaller fruits, currants are grown on a larger scale around San Leandro than in any other part of the State.

Vegetables are one of the chief crops in that part of the county around San Leandro, San Lorenzo, Haywards and Niles, which lands perhaps provide a livelihood for more farmers to the square mile than any other territory of equal size in the State. Among these vegetables are found cucumbers, tomatoes, sweet corn, peas, early potatoes, rhubarb and some onions, besides a large list of miscellaneous vegetables.

Among the higher valley lands are the Livermore valley, the Sunol valley, Castro valley and the Altamont section. In most of these sections the principal crops grown are hay, grain and wine grapes. The quality of the former crop being well known among horse men and other particular feeders and enjoys a reputation second to none for feed.

In the lower sections, along the bay, between San Leandro and Warm Springs and around Pleasanton, the dairying industry is of considerable importance, the product, which amounts to about $544,417 yearly, is mostly sold in the form of sweet milk and cream to the bay city milk trade. In these lower sections, especially around Alvarado, sugar-beet raising has been an established industry for a great many years.

Poultry has come to the front in the closely subdivided sections, and Hayward now has the second largest poultry district in the State. Livermore is also a large poultry center.

In the mountain districts, where farm crops are not grown, large bands of sheep and cattle are run on the range, thus making the resources of the county almost complete from an agricultural standpoint.

A peculiar fact was that with all of this agricultural production, the only fairs held in the county up to two years ago, were those staged in Oakland many years ago, and this, too, in face of the fact that one of the fastest and best maintained race tracks in the State has been situated at Pleasanton for a long time.

That fact also appeared strange to Mr. Hall, after which he conceived the idea of organizing a stock company, composed of men, either farmers or men directly dependent upon the farming interests, whose purpose would be to advance horticultural, livestock and general agricultural interests, through demonstrations of an educational nature.

After interviewing prominent men of the county, whose interests lay along these lines, it was decided to incorporate for $10,000, there being 100 shares at $100 each. To the credit of the farmers it should be noted that most of this stock was subscribed for by men whose only source of income was agriculture, in some of its branches, and the books show that with a few exceptions the shareholders own but one share of stock, thus demonstrating that the plan was not promulgated with the intention of selfish greed, for in reality such moneys were more of a donation toward the upbuilding of the farm industry of the county.

To give the entire list of stockholders would be impossible in these columns, but anyone familiar with Alameda county farmers will recognize from the following list of directors and officers, many of the most prominent and prosperous farmers there. They are: E. E. Hall, president; Henry Lachman, vice-president; W. J. Dakin, secretary; H. P. Mohr, treasurer; J. N. Arendt, N. S. Boone, Manuel Brown, C. L. Crellin, Abe P. Leach, Wm. McDonald, C. H. Schween, E. H. Stevenson, T. H. Silver, F. Stenzel, and F. C. Winton.

"It is more of an agricultural improvement association than anything else," said Mr. Hall, "and besides holding the yearly fairs we have aided in securing a farm advisor for the county and in many other ways worked for the improvement of agricultural interests."

With the money secured from the stock sold, buildings were erected on the race track grounds, which are owned by R. J. McKenzie. In securing this location the fair association was exceedingly fortunate, as Mr. McKenzie gave them a lease for ten years, with an option of 10 years longer at a rental of only $1.00 a year.

In erecting the buildings, the object was to build substantial and permanent structures and the result has been that an agricultural pavilion, a woman's building, and good livestock barns have been put up in the most modern fashion for exhibition purposes. The grounds have since then been improved by the planting of lawns, shrubs and trees, and today there is no other fair association in the State that can boast of more beautiful or up-to-date grounds and buildings.

In the foregoing we have endeavored to show why this affair should be catalogued as an agricultural event, insofar as the directorate and their purposes are concerned, but after all it is results more than merely good intentions that count most and the average person would rather know of the things that have actually been accomplished than the things which are hoped for.

Under the able management of W. J. Dakin, who until the past few months has been in charge of farm operations, the fair of 1912 proved entirely successful, both from an educational and financial standpoint, and he was again selected as secretary in 1913 and 1914. Due to the hard year on farmers generally the fair last year did not fare so well as that of the previous year, and then, too, the mistake was made of being too generous with race-horse purses, in an endeavor to afford visitors the best of entertainment.

Now horse races are one of the things which have been handed down from generation to generation to all fair associations, and to quote Mr. Dakin, "the people expect horse races at a fair and you can't get away from it." However that may be, the purses for the races have been slightly reduced this year, and the difference in premiums has been added to those things of a strictly educational nature.

By this we do not mean to infer that the visitor of this year's fair will not have an opportunity of being entertained in the most approved and popular fair fashion, but that he will also feel after attending the fair that he, or she, has gained knowledge which will aid in building up rural life.

As an example of this phase, Mr. Hall pointed to the fact that his association had been instrumental in securing a general exhibit from the agricultural department of the University of California, which will include the different breeds of livestock, horticultural and agricultural products, soils and fertilizers, and provide the visitor with an opportunity of listening to lectures on the fundamental principles of agriculture, as seen from the college viewpoint. To assist in this work, Dean T. F. Hunt of the University of California is to deliver a lecture on "How to Develop California." This feature has been incorporated in the fair's program with the idea of bringing the agricultural department of the university into closer touch with the farmer, for it is realized that advanced ideas on this subject can best be carried through the public lecturer.

In securing horticultural exhibits, this fair is particularly favored as those districts above mentioned are productive of some of the finest deciduous fruit and vegetables grown anywhere in the State, and while the two preceding years have been hard ones in which to secure such exhibits as the management would like to have, the support along this line already promised, assures the fair of an exceedingly fine display this year. In this respect the value of farmers as stockholders and di-

rectors is much in evidence, as a number of the largest orchardists and vegetable growers in the county are held directly responsible for the showing of those products.

As added attractions to those interested along this line, the directors have secured the co-operation of the Alameda County Exposition Commission, who expect to show a large share of the exhibits which have been gathered for the Panama-Pacific Exposition next year. Several of the smaller towns and districts in the county are also planning on entering exhibits, and these, together with the individual exhibits from farmers themselves, will make up a show in itself.

What has proven a big feature of the other two fairs from a feminine standpoint, for these directors respect the ladies' presence as much as the men's, is the large exhibit of everything pertaining to the needlecraft and culinary world. Having a large and spacious building for these exhibits, and through the efforts largely of the ladies, this department is expected to be full and running over, for, to quote the superintendent, "every woman's club, sewing society and the like in the county are now boosters of this show."

For the younger generation who are perhaps not interested in agriculture, or at least have not arrived at the proper age for such serious consideration, the schools maintain exhibits of children's work.

With a few exceptions the livestock in Alameda county are grade animals, and while many of these are well bred, there is a vast number of farmers who have paid little or no attention to the breeding of their herds.

This and the fact that there is room for much expansion along livestock, and particularly dairying, lines, has led the fair association to expend extra effort in making those features of the fair stand out as criterions of the methods the farmer should pursue with animal husbandry. It is interesting to note in this respect that the efforts of the fair have already been felt in the surrounding country, through the purchasing of several registered sires to take the place of scrubs which were formerly in use. In the instances spoken of we were told that the purchasing of these animals was directly attributed to the purebred herds at past county fairs.

Being as yet a limited purebred district, the management is dependent upon exhibitors from other localities, and it should be said to the credit of the management that breeders from other sections recognize the earnest purposes of the directors and consequently do all that is possible toward making the stock exhibits of interest.

As an illustration of how these farm directors appeal to the fairness of their prospective livestock exhibitors, we quote what they have said in this year's catalogue regarding their draft horse department: "In this department an increase in premiums has been made, but not, we realize, as that class of horse in the present stage is entitled to, and what we would gladly give if able to. We have, however, given what we felt justified in doing and hope that by another year State aid may be given fairs, that more substantial backing may be given such worthy objects. In the meantime we would ask that the breeders meet us half way, to make the fair a success, as that success is one of the means of attaining the desired end."

Such frank statements of the true situation cannot help but appeal to the stock men who are prospective exhibitors, and it is this truthfulness on the part of the secretary and directors that has been instrumental in adding materially to this year's display of all kinds of livestock. As one prominent livestock breeder and showman of another section told us, "Those fellows at Pleasanton always treat us square and do the best they can under the circumstances to make conditions for the exhibitor comfortable."

Classes are yearly provided for all kinds of livestock, including poultry, and every energy is strained to provide the best possible premiums with the amount of money available.

As was intimated in their premium list, which we have quoted from in part, it is the hope of the directors to secure some State aid for this and other county or district fairs, and if such aid can be secured it will greatly add to the educational features of the fair, as it will allow for a wider variety and higher quality of exhibits.

It should not be inferred from the above, however, that exhibitors of livestock at this fair are paid with promises, for quite the contrary is true and their premium lists show that they give as much, and in some instances more, prize money than other fairs held in the State.

To the reader unacquainted with Alameda county the question might arise as to why Pleasanton, a comparatively small town, should hold a fair of this size? Well, in answer to that question, the president of the directors pointed out that it was closer to the bay cities than any other agricultural fair, had the finest of transportation facilities, with two railroads and good automobile roads, and lastly had a climate which was ideal for the holding of such an exhibition.

No one can foretell what the future of this fair will be like, but one thing is certain, namely, that this association intends to feature the educational exhibits to the exclusion of all other things and that this educational campaign is to be directed more especially at the agricultural aspects of their county.

With such ideals and with sound and conservative leaders to carry out the program, it is expected that the attendance this year will double that of last year and thus make for a bigger and better Alameda county, agriculturally at least.

...eda County Fair Grounds.

SANTA ROSA FAIR SUCCESSFUL.

[Written for the PACIFIC RURAL PRESS.]

That the Sonoma-Marin District Fair, held at Santa Rosa, marked a successful beginning to the California fair season of 1914, was the opinion of the thousands who journeyed to that place last week.

Every interest pertaining to agriculture was well represented in the varied and interesting exhibits shown in all departments.

In the horticulture and agriculture departments the exhibits entered by the Sebastopol Apple Growers' Association, in the shape of an immense water wheel in motion, made of apples; the farmer's home made of corn stalks, with a legend "The Farmer Feeds Them All," and accompanying display of farm products shown by the Pomona Grange; the Ferris wheel carrying a collection of farm products by the Santa Rosa Chamber of Commerce and the grape arbor with grapes and wine exhibited by the Grape Growers' Protective Association were easily the big features, although there were many other fine exhibits made by individual farmers in other horticulture and agriculture divisions.

In the cattle divisions the Shorthorn entries were the big feature, as the show herds of both T. S. Glide and A. W. Foster were contendors, making the contest for supremacy of exceptional interest. The horse classes were fairly well filled, the Shires of Jack London affording the largest individual exhibit of the heavier breeds.

In the swine division more interest was manifested in the Berkshire classes, as that breed was well represented and competition was stronger than in other classes. Prof. J. I. Thompson, of the University of California, and associates judged the livestock.

The poultry show this year was larger and more meritorious than than of last year, the quality of the White Plymouth Rocks, Barred Plymouth Rocks and Black Orpingtons being exceptionally fine.

While the poultry show last year was held in a tent, a building was provided that department this year which met with general approval.

That interest in hares and rabbits is being revived in the State was demonstrated by the fine display of these animals, which was said to be the finest shown on the Pacific Coast for a number of years. Flemish Giants were particularly good both in quality and numbers.

As is usual at this fair, the trotting races created much interest on the part of attending visitors, and many fast heats were pulled off which further established the reputation of the track as being one of the fastest in the State.

At the time this is written, it is impossible to give the total attendance for the week, but it would seem that the total number of paid admissions will exceed those of last year.

With such a successful beginning the various county fairs as well as the State fair seem more certain of success this year than ever before in the history of the State.

A shipment of 118 head of steers recently shipped from Pixley, Tulare county, brought a total of nearly $9,000. They were said to be in fine condition for slaughtering.

The Eight-Hour Law Irrelevant.

(We present below two interesting communications, apparently written in a spirit of coolness and desire for fairness, which are intended as answers to the arraignment of the 8-hour amendment by two ladies in the Pacific Rural Press of August 29. Of these communications we will only say that to the various good things which the writers desire, the 8-hour amendment is not in the least conducive. In fact we believe the reforms which they desire will be indefinitely postponed by the arbitrary 8-hour limitation and they should therefore abandon advocacy of it.—Editor.)

WRONGS WHICH AN 8-HOUR LAW WOULD AGGRAVATE.

To the Editor: After reading several articles "on the 8-hour law" in your paper, I wish to make a reply.

I do not consider myself a hobo or tramp; nor do I consider the mass of California farm laborers such as your articles or the writers of "A Broomstick for the 8-hour Law" or "A Country Woman's view of the 8-hour Law" seem to consider us.

I am a young man of a family. At first I was much against the 8-hour law. I have studied the amendment and nothing has made me so much in favor of its passage as a lecture I had the opportunity of hearing, against its passage. The speaker was so selfish and inconsiderate in his views that I began to see the other side.

I believe that the law should be amended and in some ways it would work hardship upon the dairymen and others, but this will adjust itself. The passage of this law would do a great deal more to uplift humanity and help a great many more than it hurts.

Remember, we should stand for that which is to uplift humanity and the masses of the people. California is big enough and grand enough to care for all of us without making any of us slaves or road tramps.

The working classes have heretofore depended upon strikes as the only means by which to better themselves. Now they have an equal privilege (through the initiative) to have their cause presented lawfully and determined by a legal vote. Surely nothing will put civil wars off longer than allowing all classes to have a right to submit their causes for a vote to the people and the assurance that they will be granted and protected by the flag in securing if the majority want same. In kingdoms the masses must do as they are told regardless of the majority that would do otherwise. They must not speak or agitate their wishes, but in time they will rise against their own flag. Thanks that in our country they may with equal opportunity try for any measure and still follow the flag. The ballot may be used and not blood and life.

What mother, sister or daughter doesn't want to see husband, son or brother after work for a few moments; see them read and enjoy being with their family a few moments before bedtime? What mother, sister or daughter is disappointed because they know if by fate some hour their supporter be killed or disabled, they will have some compensation legally left to them (paid equally by all the state's survivors) instead of having some good neighbor pass the hat around or having her children put into an almshouse and the family scattered, simply because those wealthy residents object to paying an insurance to protect their help?

Your writer of "A Broomstick for the 8-hour law" threatens to turn the state over to the Japanese, for spite. Dear madam, what are you going to do with your sons and daughters?

The writer states that to give working people 8 hours work (allowing them to have a chance to have a little family home life) would make California a mockery to the civilized world. I disagree, believing that the workers would have time to enlighten themselves; read a little and enjoy home life.

Why, madam, haven't we a better class of help to harvest our crops in California? Imagine your own son, with a wife and children, or your husband coming to your own ranch and asking for a chance to help you harvest your crop. He is invited to take his blankets to the barn, or get some sacks and make a bed. He is offered $1.50 per day and expected to work 12 hours. Sunday he is expected to hitch up your surrey after washing it and then he may go home for an hour or so and see his wife and children, provided he returns in time to do the chores.

We can't all be ranch owners or have the best jobs. You are objecting to the class of labor you get. Whose fault is it? Not yours or any other individual's but the fault of our present habits and system, which through the ballot we are trying to change. Where would you be if these workers didn't come around at harvest season?

What encouragement would it be to your sons to invite a bride to some little cabin in a village, with the assurance that he would try to call upon her an hour or so Sunday, provided he could get off?

Our sons and daughters can't all go to the cities, and for my part we don't want them to. We want to make conditions such that they can be contented to start out young and happy, with health and hope, perhaps no means, and make a livelihood (in happy married life) in the country. This he could do as a worker making small savings; next, if alert and successful, a little home of his own or a foremanship.

We can't all be big ranchers; we can't all start out rich. What chance has an honest ranch-working father working 12 hours per day at $1.50 with several sons, either to instruct them or to start them out rich?

The writer of "A Country Woman's View of the 8-hour Law" writes that the farmer is not going to better the working man by paying him $2.50 per 8-hour day, even though he earns it. Put your own husband, son or brother in the workingman's place and then see if you can repeat this statement. E. W. BENTLEY,

Napa.

(Continued next week.)

FOR SALE

Some extra choice registered POLAND CHINA BOARS of serviceable age; also younger pigs of both sexes. : :

Waukeen Stock Farm

Chas. N. Odell Modesto, Cal.

AMERICA'S LEADING HORSE IMPORTERS

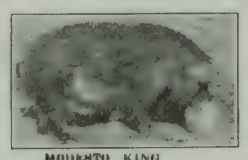
PERCHERONS

Our recent importation arrived at our Oakland stables June 15th and July 7th. The best that France produces. Every horse is sound, stylish and of the best conformation. The Dunhams of Wayne, Illinois, have sold over 200 imported Percherons to California breeders. William McLaughlin, who from 1895 to 1898 had charge of McLaughlin Bros.' stables at Kansas City, Mo., has shipped to California and sold in the State 150 Percheron stallions. As to the liberality of our treatment of customers and the fairness of our contracts, ask any man who has ever bought a stallion of W. S. Dunham or William McLaughlin.

It you want the best, let us hear from you.

DUNHAM-McLAUGHLIN CO.

WAYNE, ILL. OAKLAND, CAL.



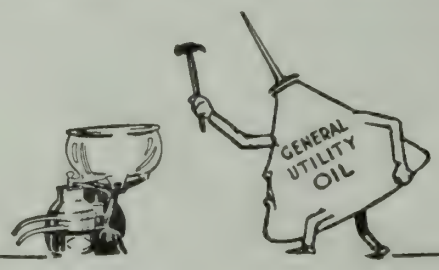
MODESTO KING
1st prize aged boar at 1913 State Fair

Put your low-priced barley in to good hogs this fall

Have 85 suckling pigs to pick from now. Ten more sows to farrow soon. Will have 20 bred gilts, also service boars for sale after showing at State Fair in September. Hogs are scarce. Order now for fall delivery.

DUROC-JERSEY FARM

JNO. P. DAGGS, Prop., Modesto.



The Wrong Oil Ruins Your Separator

To lubricate your separator with ordinary or general utility oil is one of the quickest ways of sending it to the junk pile. You need a special oil for the finely adjusted mechanism of this delicate farm machine.

Standard Hand Separator Oil

is made especially for cream separators—and for that reason it will most satisfactorily lubricate your separator. It keeps the bowl spinning smoothly and enables you to get *all* the cream. It doesn't "gum." Saves repair expense. Lengthens the life of your separator. Ask your dealer for Standard Hand Separator Oil.

Standard Oil Company

(California)

With the Livestock Men.

The W. T. Jenkins company, of Winnemucca, Nevada, has just shipped another trainload of mutton from Halleck, Nevada. This is the third trainload to be shipped by that company this season.

In its last monthly report, the Visalia Co-operative Creamery is shown to be in a flourishing condition, the receipts of the creamery for butter during the past month having been $25,500, the average price paid for fat being 29 to 30 cents.

Dairymen in the vicinity of Orland, Glenn county, are organizing a company for the erection and maintenance of a cheese factory to cost $10,000. One-fourth of the stock has been subscribed for, a week ago, and it is thought that little difficulty will be encountered in raising sufficient money for the carrying out of the plan.

Two creameries are now collecting cream in the district adjacent to Fairmead, Madera county, one, the co-operative creamery managed by A. R. Bates, and the other the Sayre creamery of Madera. The latter is helping to finance farmers wishing to go into the dairy business, with the result that dairying in that section is rapidly gaining in favor.

Measures have been taken by the French ministers of war, in Paris, for the protection of blooded cattle and horses to be used for breeding purposes. Unless some such protection is afforded breeders in that and other European countries now at war, they would suffer great losses and in many instances their entire herds and studs would be demolished.

A meeting of range owners and cattle men of Southern Monterey, western Kern, western Kings, northern Santa Barbara and all sections of San Luis Obispo counties was held last week in an endeavor to merge the San Luis Obispo county cattlemen's association with the Cattlemen's Protective Association. It is thought that the new organization will be able to do much good to the range men in the way of protection.

Hope is being freely expressed that the present European war will stop, for the time being at least, all importations of Australian meats to this country, the conclusion having been reached that all of the available supplies in that country will be shipped to England. If such reports be true the cattle breeding industry on western ranges should forge ahead still more rapidly than they have, even with the high prevailing prices of the past few years.

In a letter to this office, J. I. Thompson, secretary of the California Draft Horse Breeders' Association, states that a meeting of that organization will be held at the Travelers' Hotel, Sacramento, at 8 p. m. September 17. Every member of the association as well as everybody interested in the draft horse business is requested to be present. With the large number of horse men who annually attend the State Fair, and with the urgent need of a stronger membership, this meeting should be well attended and result in much good being done.

The cattle market at the Portland Union Stock Yards, for the week ending September 4, was steady, top steers being quoted at $6.75 to $6.00, cows $5.75 to $6.00, heifers $6.00 to $6.25, beef bulls $4.75, and veal strong at $8.00 to $8.50. Receipts were under normal. Receipts of swine were smaller than last week and trade steady to firm, best light stock selling at $9.00 to $9.25, and smooth heavy weights at $8.00 to $8.25. Both mutton and lamb prices stiffened some, fancy lambs bringing $6.00 and fat killing ewes reaching $6.00. The outlet was broad and demand steady in this market.

Writing of their consignment of Holstein cattle to the Holstein Breeders' Consignment sale at Hanford in October, Morris and Sons, of Woodland, say that they are putting in some of the very best young cows and heifers in their herd and it is with regret that they have decided to part with them as they have steadfastly refused good offers for them at private sale. As it is, however, their desire to make this the biggest event of its kind ever held in the West, they are backing the sale up with the kind of stock which has made their herd famous. Breeders in search of herd headers or foundation stock should keep this sale in mind.

According to government officials in San Francisco, the present prospects are that no effect will be noticeable in this State, on European war account, because of extra freight rates from here east on any horses that might be purchased. It is thought that any European demands will be filled largely in Missouri and other middle western States. Rumors have it that these markets are already being called upon for several thousand horses for export purposes.

Receipts of cattle at the Portland Union Stock Yards for the week ending August 28 were heavy. Prices on extreme top steers the first of the week were $7.15 with medium stuff ranging from $6.50 to $7.00. Cows sold at $5.75 to $6.00, choice heifers $6.25 to $6.50, bulls $4.00 and light veal calves $8.00 to $8.50. Although there are plenty of hogs in the country on feed it will be three weeks before they are turned off and for that reason hog receipts were not overly heavy. Best grades of light hogs sold from $9.00 to $9.25. The demand for sheep was steady enough to keep prices at top level, fancy Washington lambs selling for $6.00, wethers $5.00 and ewes $4.35.

A conference on State milk legislation is to be held at the University of California, at Berkeley, September 24, at which time a discussion is to be held between consumers and producers, relative to the laws which should be submitted to the next legislature. Representatives are to be present from the State Dairy Bureau, the State Veterinary Department, the Milk Improvement associations, the San Francisco Center of California Civic League and the University of California. According to the tentative program, it is hoped that a better understanding may be had between the producer and the consumer, which will further the interests of both. The program will appear in a later issue of this paper.

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The California Horse Situation.

[Written for the PACIFIC RURAL PRESS.]

As we read the daily dispatches from the European war zone, it becomes more evident each day that the supplies of available horses in those countries affected are being materially reduced and that if the war continues, this country must surely be called upon for army mounts.

Dispatches state that this demand has already commenced and that orders for several thousand horses have already been placed in middle western States. Advices from Chicago, however, state that no authentic information regarding these orders has been secured, which is quite natural in face of the fact that if such buyers are actually in the field they would prefer not to have it known; as they could in that way buy at better figures.

In last week's issue we gave in brief the requirements of the U. S. government, in an effort to show the farmer the kind of horse which is most in favor for war purposes; and while each country has its own specifications for the purchasing of horses, those set by this country are in the main applicable to others.

According to those best versed on this subject, and admitting that the foreign demand has already started, the rigid requirements of the warring countries will not be lived up to in this emergency nearly so closely as would be the case in times of peace, and it is therefore probable that many horses will be purchased which would not ordinarily be considered up to the standards.

While the lowland farmers of this State produce many horses of the right size for army purposes, in fact too many in ordinary times for their own welfare, the majority of such horses are raised in the mountain sections of the State where feed is cheap and plentiful.

With any European demand it would be supposed that our mountain horsemen would be called upon to help supply the market, but government officials in this State say that they do not expect any benefit to those districts, at least not at present, on account of the difference in transporting of western and middle western horses. It is thought that any European demand will be filled largely in Missouri and other horse-raising States further east.

In matters of this kind it is hard to get the exact facts concerning placed and future orders, on account of the secrecy maintained by all governments, but from the fact that the war will make a worldwide demand for horses, the horse markets of all countries should feel the effect in the future, until such time as the supply is again up to normal.

One factor which is sure to be felt is in regard to imported stallions, as we shall probably be unable to import horses so long as the war continues. This should prove a boom for the home grown stallion; for as soon as the imported horses now on hand are disposed of, the supply must come from those breeders who have stock for sale in this country.

In view of these facts, it is therefore reasonable to suppose that the war will add stimulus to the breeding of high class and registered draft stallions in far greater numbers than ever before. It is certainly a most appropriate time for the home breeder to show and advertise his goods.

Range Horses in Inyo County.

HOGS AND DAIRY COWS ON 20 ACRES.

To the Editor: I have 20 acres in the San Fernando valley. I have planned to put in about 10 acres of alfalfa and about 7 acres of corn, cow peas, or other grain feeds from which I can get two crops a year. I want to keep good cows, preferring Guernseys, and enough good sows to raise pigs to use the balance of the feed. I want to run the place to the best advantage. Believe that I will have plenty of water for irrigating. Can you give suggestions as to the number of sows and how to divide my acreage and feed? My plan is to put the land in first-class shape and keep it that way, and make it produce accordingly. Would it pay to build a silo and how would that feed do for hogs? Would it be more profitable to pasture the hogs or keep them up and cut the alfalfa?—M. E., Los Angeles.

(The plan you outline for cropping and dividing the acreage looks entirely feasible, in fact is one which is becoming more popular among dairymen in this State each year. You can plant a wide variety of early maturing crops which will work in well with corn for a silage crop. The ones most generally in use are barley, oats, rye or vetch. Barley is the more popular as it ripens earlier for hay, thus allowing earlier corn planting. Experience seems to show that the average yield of silage corn is about 10 tons to the acre, although this of course varies widely in different sections and under different cultural conditions. With that as a base, however, it would appear that a silo 12 feet in diameter and 32 feet high, holding 72 tons would be about the proper size. We should certainly recommend the erection of a silo. Experience has shown that silage can not be profitably fed to swine, as they only eat the grain part, the balance being practically all wasted. The number of hogs that you will be able to keep depends so much upon the number of cows you intend keeping that we cannot advise as to the number of sows that will be required. It is generally claimed that one cow and three hogs can be maintained a year on an acre of good alfalfa, where the hogs receive the skim milk from the dairy. The average brood sow will raise about six pigs to the litter and can raise two litters a year. In running a dairy we believe that you would secure better results by cutting the alfalfa than by pasturing, unless you reserve a small pasture for the hogs to run on. If you select good Guernseys and good hogs we see no reason why you should not be successful in your location, provided always that you have an aptitude for the business and are willing to meet the disappointments which are most likely to occur.—Editor.)

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Prevention of Abortion in Dairy Herds.

[Written for the PACIFIC RURAL PRESS.]

There are few if any dairy sections in this State that have not suffered severe set-backs through the great amount of abortion that has prevailed among dairy cattle.

Dairymen not familiar with the disease in its worst forms have ascribed abortion to any of the following causes, viz.: goring, kicks, slips, falls, various feeds, water, drugs, etc.; and while these have probably been factors in many instances, veterinarians agree that a large percentage of abortion cases could have been traced to contagion.

Perhaps the most noticeable inroads of this disease have shown themselves in those sections where dairy development has been rapid, for it is in such places that cows are bought and sold in greater numbers than elsewhere and such conditions are ideal for the spreading of the disease.

The cause of such rapid spreading in such sections is largely attributed to the fact that in purchasing animals there is no outward indication of the disease, and the unsuspecting purchaser at public sales or elsewhere is apt to take home one or more diseased animals and in that way further spread it among his own herd of healthy animals.

Although literature has been sent out, which contained supposed cures for abortion, and these, too, very recently, no known cure is as yet recognized by the medical profession, their advice being to take steps toward the prevention of its spread.

Along this line a bulletin numbered 106 is soon to be issued by the U. S. Department of Agriculture, in cooperation with Cornell University, in which a plan is outlined with a view to the production of cleaner and more efficient herds. In part this bulletin says that the ordinary if not sole avenue of the entrance of the infection of contagious abortion is the genital canal, and the invasion antedates the sealing of the uterus, which ordinarily occurs within 30 days after conception.

In the present state of our knowledge, little or nothing can be done to prevent abortion once the pregnant uterus is sealed and the infection of contagious abortion exists within the hermetically sealed cavity.

By systematic disinfection of the genitalia immediately following abortion or premature birth, and also in retained afterbirth and kindred infections of the uterus, the affected animals may be largely guarded against future sterility and abortion. It is even more important that the vaginae of heifers, whether virgin or previously bred, and cows shall be systematically disinfected for a period before and after breeding, until conception is assured.

It is equally important that the genital organs of breeding bulls be kept clean by regular disinfection, including washing immediately prior to and after service.

In order further to insure against contagion, the following rules should be as closely observed as possible.

"1. The construction or arrangement of independent maternity and calf nursery stables, embodying all modern requirements for ventilation, light, heat, convenience for disinfection, and ample facilities for the exclusion of flies. The stables should provide enough individual stalls for all calving cows, and individual stalls for calves until at least three months old.

"2. A cow which is about to calve should be well cleaned and her posterior parts disinfected, after which she should be placed in a clean stall some days prior to expected parturition. Pending parturition, the stall should be kept scrupulously clean and well disinfected. The tail, vulva, buttocks and udder should be disinfected twice daily. In order to avoid the danger of infection to the calf while passing through the vagina of the cow during birth, either by the infection of white scours, the granular venereal disease, or other malady, the vagina should be irrigated daily with a mild disinfectant such as 0.5 per cent Lugol's solution. Such attention to the vagina also tends to carry away any infections within the vagina, which immediately after the opening of the cervical canal of the uterus at the time of calving may otherwise drop into the uterine cavity and there establish disease.

"3. When the calf is born, it should be received upon a clean antiseptic sheet and at once carried to a clean stall and rubbed dry. If it is desired to allow the calf to remain temporarily with the cow, great care should be taken to see that the bedding is kept clean.

"After the calf has been dried, if not earlier, the stump of the navel cord should be disinfected. It should not be ligated. Prepare a warm 1 to 1,000 solution of corrosive sublimate, fill a goblet or cup with it, and, having the calf held in a standing position, press the vessel against the floor of the belly, so that the stump of the navel cord is submerged in the disinfecting fluid. Retain it in this position for at least 10 minutes. Immediately afterwards, dust the stump of the cord liberally with a disinfecting desiccating powder, as alum and camphor, and repeat every 30 minutes until the stump is dry.

"The body openings (mouth, nostrils, vulva of heifer and sheath of bull calf) should be disinfected with a 0.5 per cent Lugol's solution.

"4. Prior to drawing milk from the dam or other cow for feeding the calf, or permitting the calf to suck, the udder and adjacent parts of the cow should be thoroughly disinfected. The milk should be drawn in a sterile vessel under the strictest cleanliness. If the milk is from a cow not known to be free from tuberculosis, it should be sterilized before feeding. Individual feeding vessels should be used and regularly sterilized.

"When calves have reached three months of age, it may usually be fairly determined if they are free from disease, in which case they may be handled in groups. These, however, should be kept as small as economically practicable until the heifers have calved and are ready

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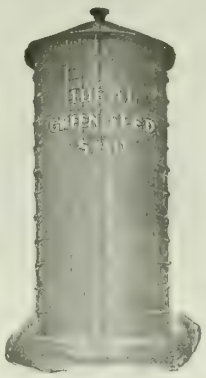
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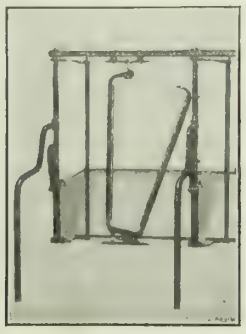
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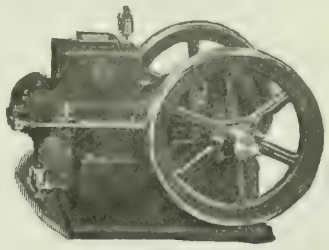
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for the dairy. Even then the larger the number of animals in one stable the greater the risk of infection and the more destructive will it be if it gains entrance.

"5. When breeding time for the heifer grown under the foregoing conditions is approaching, it is advisable that her vagina be douched once daily at least three weeks before breeding, at first with 0.5 per cent Lugol's solution, and thereafter each second day with a 0.25 per cent solution. The douching should extend over at least one menstrual period, or 21 days prior to breeding, and followed for an equal time after breeding, or until it is determined she is pregnant. The bull should preferably have been grown in the same manner as the heifers he is to serve, and his genitals douched in a similar way."

CALIFORNIA'S MILCH GOAT POSSIBILITIES.

(Continued from Page 249.)

to three, in this respect much favoring the sheep. When these kids are to be raised for breeding purposes they are heavy consumers of their mother's milk, and when not allowed to suck the doe have to be fed by hand. In commercial undertakings this would be largely overcome by the killing of the young bucks and a number of the doe kids.

The most objectionable feature of goat milk to the amateur is the odor, which is sure to be present if the breeding bucks are allowed to run with the does at all times. This fault is overcome by putting the bucks in separate yards and in that way any rancid or objectionable odors are done away with.

Another common objection to milch goats, by those not familiar with them, is the milking, the mistaken idea being that the teats are small. While this may be true with the scrub goat, it is not so with the better bred animal, for the teats are of good size, there being two in number.

Milking is done by having the goat stand on an elevated platform, Mr. Langnois having a shelf in each goat's stall, placed on hinges in such a manner that it may be folded back to the wall when not in use. This elevates the goat to such a height that no stooping is necessary.

From a producer's standpoint the market side of any undertaking is of great importance, and while, as before mentioned, little is known of goats from a commercial standpoint, it is known that for human consumption, goat milk is far superior to cow's milk and is highly recommended by all doctors for invalids and infants. Then, too, the goat men point to the cheese-making possibilities, citing as instances the European cheese makers who use goat milk almost exclusively, for the production of the finest brands of cheese imported into this country.

There is still a world of information to be gained on this subject, but at this time there appears no reason why the milch goat should not play a more important part in California's future agriculture than it has in the past.

Poultry For Profit.

Poultry House Construction.

[Written for the PACIFIC RURAL PRESS.]

The prime essential in poultry house construction is to provide for fresh air, dryness, sunlight, and space enough to make the fowls comfortable. We recently heard of some eastern people who moved to Sonoma county who were actually building poultry houses so tight that they were lathing and plastering. Now this method is worse than useless, because the poultry will not thrive in such close houses. Open-front houses are being built all over the United States at the present time, but of course we can build much lighter here than in the eastern States; also we can build with lighter materials here in the south than they can north because we do not have so much rain to contend with.

At present writing I have pullets that are nearing maturity and will soon be laying in an open front house, the other three sides being just muslin tacked on. That is a long way from lath and plaster. I have another house in which the wall material is burlap. These houses have good roofs that are water tight, and will remain so for a long time; moreover they are lice and mite proof. Though if mites should penetrate to the roof, they can be reached with a spray that would kill every one in two separate sprayings.

An open-front house such as will be comfortable for fifty hens of any of the small breeds is described below. It can be sided with whatever material the person desires. The heaviest lumber is not needed at all in the southern part of the country, hence the same lumber used in bungalow construction is generally used. The wall is free from drafts and can be painted and made to look well for suburban localities. The building is 6x10, as this makes a convenient size for moving; the narrow building is not twisted like a wide one when hauled to new ground. The sills are of 2x4, the studdings are 2x3, front is 5 feet high and back four feet. Three-foot dropping boards too feet from the ground are placed at the back side. Nests ätting right up under the front edge of dropping boards are entered from the rear. The eggs can be collected from front, as the ends of Nests fitting right up under the front the bottom and held by a button at the top. This is fastened on the dropping boards, and the bottom hinges are fastened onto the bottom board of the nests.

Chickens like to be in semi-darkness when laying, and it is almost a sure preventive against egg eating. The dropping boards should slant a little toward the back, where one board is left free to hinge so that it can be raised to allow for cleaning out.

The whole front of the house is two-inch mesh wire, and only three studs are necessary. If desired, the front can be made in one or two separate panels; and in that case the back can be boarded up tight as the panels can be removed just as easily for cleaning out, or for any purpose.

The roof is the most important part of a building in California, especially in the northern part of the State where the rain is sure to test its quality. For the rafters we use 1x3 inch stuff and put two pieces lengthwise to brace those running across. The rafters run from front to back about 18 inches apart and should extend one foot over at back, making 6-foot rafters. Under these are two pieces running lengthwise 1½ feet apart. Over this frame put 2-inch mesh wire; and it must be pulled quite tight and fastened with wire staples. We use the light two-pointed carpet tacks, as they are called, because they do not split the lumber. Don't be afraid to use plenty of these tacks and drive them home. When the wire is spread and well fastened on, then put on two widths of roofing paper. They will cost about one dollar for this size house; if cared for and well put on at the commencement, will last for years.

Now we want something to protect the front of the house in case of a rain storm, so we take a good board twelve or fourteen inches wide, put on hinges that will allow it to be set back on the top of the roof when not wanted. In rainy weather it is brought over the front and slants at a moderate angle to shed rain. It etxends over the length of building just enough to allow a brace at each end. This brace can be made from any old scrap iron with holes drilled in the ends, one of which fits over a nail at each end of the building, holding the board at the right angle. No mites, ticks, or other insect pests can get lodgment in this roof that you cannot reach with a good spray, hence its value. Besides, it is light and durable and plenty warm enough for this country, and anywhere that does not freeze tight in winter. Inch boards are much warmer, of course, so that in colder climate the board roof is almost a necessity.

We use crude oil and coloring for both inside and outside of poultry buildings and have no trouble in keeping out all pests. Lime will certainly kill mites when newly put on, but after it has been on the walls a short time, you will find it is a fine shelter for Mr. Mite. He gets under the flakes of whitewash and makes his home by day, so that he can prowl on your poultry by night.

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erally fed to hogs, there would be a marked change in farm poultry.

Beef scraps and meat of all kinds are sometimes hard to get and the chickens, ducks, and other things have to go sometimes for weeks without animal food of any kind, while the pigs revel in the spare milk. Now a pig is not by nature a carnivorous animal, yet, strange to say, everybody treats him as if he were and he gets the milk that could be made to pay 100 per cent in egg and chicken meat. Both ducks and chickens are naturally carnivorous. If they were not they would not hunt insects as they do. Milk is the one best animal food they can have. It will produce more eggs, and better eggs, than any other form of flesh food; it produces more weight in fattening poultry than any other form of animal food, and it produces the whitest and highest priced meat of all. "Milk fed chickens" are in a class by themselves and bring class price. Milk not only furnishes the animal food necessary for the production of an egg, but the lime in milk makes the shell, too. See the economy of it; if not, I can never cause you to see it.

When fed to young chicks it makes for all around growth, for in milk are the elements needed for bone, muscle and feathers. It also aids digestion, corrects the bowels, and helps the liver. If you feed milk to poultry there is just one thing to remember, and that is not to feed sour milk one day and sweet milk the next. The two do not work together; one is acid and the other sugar. But that can be easily avoided, for if you can't keep the milk sweet, let it all sour before feeding. It may be fed in any way that is most convenient, but should not be left for the poultry to walk in and make filth. To be of benefit it must be kept clean and wholesome as any other food.

A Balanced Mash Ration.

Take 200 pounds of bran; 100 pounds of middlings; 100 pounds of ground corn, or ground barley can be substituted for corn and will answer every purpose; 50 pounds alfalfa meal; 25 pounds soy bean meal; 25 pounds ground bone; 50 fish meal and 50 pounds beef scrap; 3 pounds salt; 2 pounds flowers of sulfur; 2 pounds charcoal. Mix very thoroughly, and then mix again, because you can't mix too much.

Never feed mash for the early meal in cold weather; the hens need exercise to start the circulation and this is best gotten by feeding a light feed of grain in deep litter.

At present we are feeding soaked barley, because it is cheaper, but how long it is going to be cheaper is a problem we are not able to solve. But good clean fresh barley is better than old musty grain of any kind; beware of feeding musty grain; several poultrymen have lost stock just lately through feeding it.

Scrapple, or Home Made Meat Food.—As the fall killing season will be around soon, there will be more or less waste meat on the farm, which can be made to do good service if taken care of. For those who have a bone cutter it can be made to pay double at killing time. Catch the blood and all pieces of waste meat, grind the bone into coarse pieces, and put all on to cook in the big kettle, including feet and hoofs of cattle, sheep, etc., season with salt and cook five or six hours. Skim off the excess of fat and save to cover the meat when cooked. When the meat is nearly cooked, stir in corn meal until the mixture is a stiff dough. Cook well, stirring all the time to prevent corn meal from burning. When cooked pack in stone jars or galvanized buckets, or even wooden candy buckets. Pour the extra fat over the tops of the buckets of meat and the contents will keep indefinitely, if stored in a cool, dry place. Feed the chickens one meal of it about three or four times a week and you will get plenty of eggs while it lasts.

Skunks, Ducks, Ticks, Anconas.

To the Poultry Editor: Can you tell me what animal bites the heads of our pullets and never alike; also what animal would be likely to crush the heads of pullets?

I would also like to know which kind of duck or goose is most profitable for beginners. Where can I get White Holland turkey eggs for hatching?—Subscriber.

In reply to your first question, you will find the nice little pussy with a stripe along its back, commonly called a skunk, is responsible; in fact, the skunk either bites the head off or crushes it, just as the fancy takes it. By setting a trap in the entrance to the chichen house and closing up all but just that space where the trap is laid, thus forcing him to go through that entrance, you will get him. Leave the chickens in the house as usual, but cover the trap up so that he will not see it, then he will walk over it and get caught.

The Pekin duck is the most profitable and easiest to handle for beginners.

I do not know about the White Holland turkeys; won't some of our readers who have them please advertise?

A subscriber signing "E. B., Modesto," has a bug that resembles a tick; hides at day and sucks blood at night, and wants to know what it is and remedy. It is Mr. Tick himself; they have more than one color. I am afraid, ifyou have so many, that you have an awful job on your hands. The only thing you can do is to get right after them with a spray pump and use crude oil with one gallon of crude carbolic acid to five gallons of crude oil. Remove the poor hens, and after cleaning the buildings, dip the hens in creolin and warm water. One ounce of creolin (Pearson's) to about two gallons of water will free the hens of any that might remain on them; also look out for eggs. Ticks lay their eggs in the feathers. You will need to spray several times, but keeping at it will get them all.

To the Poultry Editor: Do Ancona eggs command equally as high a price as Leghorns on the city market?—W. M. H.

Anconas lay a very nice egg that is much more even in size than Leghorn's, and is well liked everywhere. Yes, they certainly do bring top price on any market. You will do all right by going into them if you want eggs, but they are not much of a meat breed.

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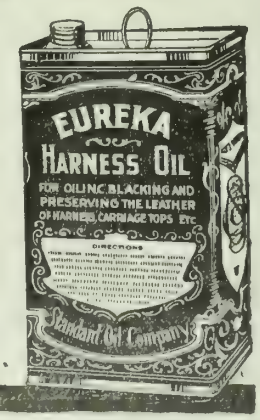

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The Home Circle

A FAMOUS MAN'S MOTHER.

I trace to my mother's direct influences, they ordinarily came by youngest son's life—the love of personal liberty, of religious freedom and of the equality of the sexes. As to the more subtle and intimate influences, they ordinarily came by contact, not by preaching. She always maintained that the younger children of a large family had a much better chance for development than the elder, because they had more freedom to develop themselves. With her elder children she always said over-conscientiousness almost bore her to death. She felt personally responsible for every childish fault. She had been reared in the school of Locke, which regarded the human soul as a blank paper, on which parents and teacher did all the writing. But her children were of strong and varied individuality, and she learned in time to study the temperament of each and to be patient with its unfolding. Her whole formula of training consisted in these three things—to retain the entire confidence of the child, to do what ever seemed wisest and to be patient. Her trust in Providence was absolute and controlling, as was her sense of the personality of the Deity. Most valuable of all her traits to her children, next to her quality of sunshine, was probably her absolute rectitude, the elevation of her whole tone, the complete unworldliness, so that no child of hers ever heard her refer to any standard but the highest. With all this was combined the conscientious accuracy in affairs, the exquisite nicety in all household details which belong to the best of the traditions of New England.—Thomas Wentworth Higgins in Exchange.

A SOAP BUBBLE PARTY.

Have a soap bubble party. The fluid that is recommended to produce the best results is made from an ounce of white castile soap cut into small pieces and boiled three or four minutes in three-fourths of a pint of water. When the liquid is cool add three-fourths of an ounce of glycerine. Make this preparation the day before the party and put it in a tightly-corked bottle. The bubbles made in this way are very brilliant. A long table covered with an old blanket is a very good place for showing off the bubbles. Clay pipes should be used. They should be new for best results, and are very cheap if bought by the dozen.

THE COOKING OF EGGS.

Eggs, says Miss Parloa, are hard to digest if improperly cooked, but by maintaining a heat just below the boiling point they are cooked so as to be easily digested and full of nutriment. It is a simple fact that the amount of water affects the cooking of eggs. Half a pint is necessary for one, and while every extra one does not require that much in addition, there should be plenty of water. Have it boiling, put in the eggs, take the pan from the fire, cover and wrap closely, or set on the back of the range for ten minutes, when the albumen will be cooked evenly, whereas if it had been boiled three minutes it would have been soft within, tough without and very indigestible. "So," says Miss Parloa, "you see that the right way to 'boil' an egg is not to boil it at all!" This principle, she went on the say, applies to soups that require a regular, low temperature and also quick cooling in a fresh current of air.

POTATOES BAKED IN HALF SHELL.

Wash carefully and bake six medium-sized potatoes in a hot oven, putting them in a dripping pan, as they will then be easier handled. When done cut a slice from the top of each, and scoop out the inside. Mash, add two tablespoonfuls of butter, salt, pepper, and moisten with three tablespoonfuls of hot milk; then add the whites of two eggs, well beaten. Beat the mixture until creamy, refill skins, leaving it rough on top, not smoothing it down, and bake from five to eight minutes in a very hot oven. Sprinkle if desired, before baking, with grated cheese. The cheese used in the lesson was a combination of the American and Parmesan cheese, but ordinary cheese may be used. Parmesan is best bought by the pound, grated as needed. To serve baked potatoes satisfactorily, work them in the fingers until soft and mealy, then break open to let out the moisture, toes are not good for convalescents and serve immediately. New potaor young children, as they are not thoroughly ripe.

SUGGESTIONS.

Save all the stale bread, grate it, and keep in glass jar with lid. This makes an excellent covering for fried veal, fried liver, croquettes and oysters.

Decanters and carafes that are stained inside may be cleaned with a mixture of vinegar and salt, rock salt being best for the purpose. To a handful of salt allow a gill of vinegar; put both in the decanter and shake well until the stains have disappeared. Rinse well.

When trying out fat, cut a potato in the thinnest slices possible and drop in while hot. This prevents a smutty look and makes the fat clean and sweet.

The best way in which to clean hair brushes is with spirits of ammonia and warm water. Take a tablespoonful of ammonia to one part of water; dip the bristles up and down without wetting the back; rinse in clear warm water; shake well and dry in the air, but not in the sun. Soap and soda soften the bristles and will turn an ivory-back brush yellow.

For shampooing take five cents worth of powdered castile soap, the same quantity of borax, add to them two tablespoonfuls of alcohol, the beaten yolk of an egg and a pint of hot water. Put this in a bottle and cork it tightly. When used, rub well into the scalp and make a good lather. Carefully wash the hair in several waters, having the first water hot and the last one cool. This will prevent taking cold if the hair is dried thoroughly.

Wifie: "Do you actually think there ever was a man who could conscientiously say to his wife, 'You are the only woman I ever loved'?" Hubby: "Certainly." Wifie: "Who?" Hubby: "Adam."

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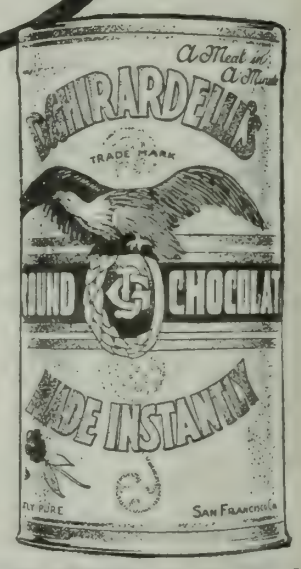

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Our Young Folks

IN PURSUIT OF COLUMBUS.

By Mary Davis.

The Foster twins were hard callers to entertain. Esther gave Brother John a piercing glance which meant that it was his turn to say something. He took off his spectacles, while he was thinking, and polished them on the sleeve of his blouse.

"Perhaps," he proposed in his sugary drawl, "they would like to see Great-aunt Cornelia's china dogs?"

"Huh," commented the Foster boy, "haven't you anything that's alive?"

"We've got three cats, two dogs, a goat, and a pig," boasted his sister.

"You haven't a ra-," began John rashly, but the toe of Esther's red slipper gave him a sharp reminder to stop talking.

"Haven't what?" both Fosters demanded, with eyes as big and round as saucers. The Fosters had sharp noses for secrets. When they spied Esther shake her head ever so slightly at John, they hopped up and down on one foot, squealing "Please tell us! please tell us!" until Esther was ashamed to refuse any longer, and John went flying out of the room like a grayhound. In a minute he was back with a large white rat in a cage.

"His name is Columbus," he said, with impressive dignity, "and he's half Esther's and half mine."

"He's a perfect beauty," conceded the girl twin. Her brother leaned over the cage as if to inquire into Columbus's merits more closely, and slyly pulled the door of the cage ajar. Naturally a Columbus was always on the lookout for adventure. Before the joint owners of the big white rat realized what had happened, Columbus had glided over the nursery floor and disappeared into the big bedroom across the hall.

"John," sobbed Esther, "he's gone into Aunt Elizabeth's room!"

The Fosters thought it high time to depart, and they clattered down the stairs with many sly nods and winks at each other. John and Esther organized a search party at once. John threw himself flat on the floor and began to worm his way under the huge four-poster bed. Esther courageously ran her hands up and down under the bureau and dresser to see if Columbus had taken refuge there.

The search party was interrupted by the entrance of a tiny, elf-like looking old lady, who stared unbelievingly, first at the sight of two plump legs sticking out from under her bed, and then at a slender child on tiptoe, feeling recklessly among a high shelf of Dresden china shepherdesses.

"Children," said the elf-like looking person, majestically.

The plump legs waved wildly in the air as John painfully backed out. Great holes were in the knees of his stockings, and his face was disgracefully dirty; but for all that he retained his presence of mind. Esther, on the contrary, shook and trembled like a brown November oak leaf.

"What are you doing here?" asked Aunt Elizabeth, in a quiet, stinging voice. "Why, auntie," drawled John, stopping to give his spectacles an extra fine polish, "we chased a rat into your room."

Esther's heart began to beat again, and the color came back to her cheeks. How clever John was to tell the truth so nicely! She looked steadily into Aunt Elizabeth's keen eyes.

"Where did he come from?" mused Aunt Elizabeth.

"Oh, from the barn," said John in an off-handed way: "he was an awful big white one."

"White one!" sniffed Aunt Elizabeth: "I think you're a couple of dreamers. We must hurry to get ready for tea."

For a month now Aunt Elizabeth had been enjoying the luxury of parting a little boy's hair and tying a little girl's ribbons. By and by the three went down to tea hand in hand. Wandering Columbus was forgotten in the joy of tiny hot tea biscuits and orange marmalade. But Aunt Elizabeth believed in an early bed hour for children, and all too soon tucked each safely in his little white cot. Then thoughts of Columbus troubled each little heart.

"I hope he's not hungry," worried Esther.

"I did tell her the truth," argued John to an accusing conscience; "she didn't ask me whose rat it was."

At the breakfast table both children asked the same question in different ways.

"Did you sleep well, Aunt Elizabeth?" asked Esther, politely.

"You didn't squash him, did you, auntie?" drawled John, sadly.

"Very well, thank you, Esther. Squash what, John?" answered Aunt Elizabeth.

"The rat, auntie," sang out both children in chorus.

"Gracious, no," shuddered Aunt Elizabeth; "but I believe I'll tell Emma to set a trap in my room at once." She rang the bell and gave the order.

The word "trap" destroyed tender-hearted Esther's appetite, and she sat with folded hands watching the others eat.

"Guess I'm sick," she said gloomily, "and I'd rather not go out in the auto this morning, if you don't mind, auntie."

So Esther was made very comfortable on the great leather couch in the library while Aunt Elizabeth and John left for their morning drive. When they were fairly gone, the invalid sprang up and scampered up the stairs to Aunt Elizabeth's room. Yes, there was the cruel trap, baited with a tempting morsel of cheese. She picked it up carefully and started to take out the bait when she heard a little rustle above her, and there was Columbus peeping out from behind the cuckoo clock. Just then the trap caught and held her rosy finger. She opened her mouth in a big round "O" to scream for help, and then she remembered her duty to Columbus and shut it firmly. Down on the bed she crouched and worked away at the obstinate spring with her left hand, and at last, after several minutes of sharp pain, she was free. She wanted to cry, but time was far too precious. Columbus must be caught before Aunt Elizabeth's return. Columbus seemed to be tired of adventures at last. He did not offer to run this time, and Esther soon had him back in his little cage in the barn. He had Aunt Elizabeth's cheese for his dinner, and appeared contented and happy.

Then back pattered Miss Esther to the great couch in the library, where she had a fine nap, until John awoke her by tickling her nose with a peacock feather.

"Cuddle down again," commanded Aunt Elizabeth, "and John, you naughty boy, sit down in that chair, and listen! Your father and mother won't leave India for two more years, anyway, and I am going to keep you with me the rest of the time. You have shown yourself to be both honorable and well bred, and I think we can be very happy."

John and Esther gave each other a joyful glance. They both preferred Aunt Elizabeth to the housekeeper at the farm. Then they remembered something else. John stood up sturdily and went to polishing his glasses with great energy.

"You won't want me, Aunt Elizabeth," he drawled regretfully: "it was my rat that escaped into your room."

"Half of it was mine," whispered Elizabeth, "and I was the worse, for I played sick, and went up in your room and got caught in the trap, although I did catch Columbus."

It was very still in the library. John patted his fat little chest comfortably.

"Didnt it feel just as if you had a big stone there?" asked Aunt Elizabeth, with rare insight.

"M-m," agreed Esther and John.

"And you don't want to live with me?" she went on.

"Do you want us?" almost shouted Esther and John.

Aunt Elizabeth out her arms.—Christian Register.

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60c Tea 45c	40c Coffee 33c
50c Tea 35c	35c Coffee 29c
40c Tea 30c	30c Coffee 25c
Any Flavor	Whole or Ground

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3 lbs. Rex Coffee 40c quality for 98c
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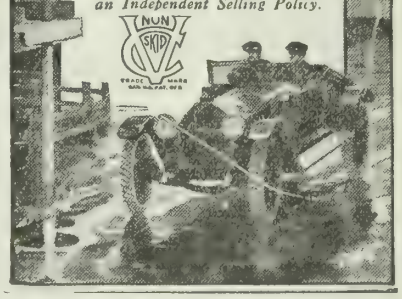

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A CHOICE BLEND OF PURE COFFEE
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THE WM. J. SCHROTH CO.
112-A MARKET STREET SAN FRANCISCO, CAL.

The Markets.

(Unless otherwise noted prices quoted are f. o. b. San Francisco.)

San Francisco, Sept. 8, 1914.

WHEAT.

The rapid rise in the Chicago market has led to a rather rapid advance in the Coast grain exchanges. On September 8th there was a slight reaction in the east due apparently to talk of an early ending of the European war. This may result in a stationary market here for a few days.

California Club, ctl.	$1.80	@1.85
Forty-fold	1.77½	@1.80
Northern Club	1.80	@1.85
Northern Bluestem.	2.00	@2.10
Northern Red	1.80	@1.90

BARLEY.

While barley is quoted higher than it was a week ago, the advance has not been nearly so great as last week, and the opinion prevails that the upward limit has about been reached. Shipping of California barley to Great Britain continues.

Brewing and Shipping		Nominal
Choice Feed, per ctl	$1.17½	@1.22½
Common Feed		Nominal

OATS.

Red feed oats are again up this week. The extreme high prices have brought some seed quality into the market; and both red seed and black seed are again quoted.

Red Feed	$1.40	@1.50
Seed	1.55	@1.65
Gray		Nominal
White		Nominal
Black Seed	1.75	@2.25

CORN.

The corn market shows no change as regards the standard qualities. Some of the Argentine corn which arrived in poor shape some days ago and which sold last week at seventy-five and eighty cents for the best, is still offering. The top figure for the best of this is ninety cents.

California Yellow..		Nominal
Eastern Yellow ...	$1.90	@1.95
Eastern White		Nominal
Egyptian		Nominal
Milo Maize		Nominal

RYE.

There is no change in the rye situation, both demand and supply being very limited.

Rye, per ctl	$1.40	@1.50

BEANS.

(On wharf.)

There have been several changes in bean quotations this week, some of them being up and some down. Dealers are anxious to place their stocks at a figure that will close them out just about the time the new crop begins to arrive and are yet anxious not to exhaust their supply before new goods can be had. Large whites and pinks are about the weakest spots in the list this week. Reports from the growing sections are all favorable both as to the size of the crop and the quality of the beans. New beans are expected to put in an appearance soon after the middle of the month. It is reported that a car of new crop limas has been sold in Southern California for eastern shipment at 6 cents.

Bayos: Cal., per ctl		Nominal
Mexican	4.00	@5.00
Blackeyes	3.50	@4.50
Cranberry Beans ..	4.25	@4.50
Horse Beans	2.50	@2.75
Small Whites	5.25	@5.75
Large White	4.00	@4.25
Limas		7.50
Pea	5.25	@5.50
Pink	4.00	@4.15
Red Kidneys		Nominal
Mexican Red		Nominal

SEEDS.

The seed market has been almost entirely neglected this week, though there has been sufficient demand to offset any new arrivals. The situation is described as firm.

Alfalfa		Nominal
Brown Mustard, per lb		3¾c
Canary		Nominal
Hemp	3	@ 3½c
Millet	2¾	@ 3¼c
Timothy	7½	@ 8 c
Yellow Mustard		Nominal

FLOUR.

The flour market, which usually runs along without much change for months at a time, is now quite unsettled. There has been a further advance this week, and the lower grades are not very well established at the advance. Family extras are now fixed at $6.40 to $6.80, a rise of sixty cents a barrel in the last two weeks.

Cal. Family Extras.	$6.40	@6.80
Bakers' Extras	5.30	@5.80
Superfine	4.30	@4.70

HAY.

San Francisco hay dealers continue to talk of heavy receipts and a very light demand; and certainly the receipts of the past week, over 5000 tons, cannot be considered small. There must, however, be some elements of strength in the situation; for, notwithstanding these heavy arrivals, prices for the week have undergone no changes. Probably prices are already so low that holders, both here and in the country, prefer to keep their stocks rather than make further concessions. It is held that as buying has so far been below the average for this time of the year, there must necessarily be an increase of buying later on.

No. 1 Wheat, or Wheat and Oats	$8.00	@ 9.00
do No. 2	6.00	@ 7.50
Tame Oats	7.00	@11.00
Barley	6.00	@ 8.00
Wild Oats	6.00	@ 8.00
Alfalfa	6.00	@ 9.00
Stock Hay	4.50	@ 5.00
Straw, per bale	30	@ 45c

FEEDSTUFFS.

The market is of a more permanent nature this week, only two advances having been made. Rolled oats and rolled barley are up again in response to the advances in the whole grains. Bran and shorts continue very scarce, though the high prices have so reduced the demand that no further advances are to be quoted this week. The whole list continues very firm.

Alfalfa-Molasses Meal, per ton	$19.00	@20.00
Alfalfa Meal, per ton.	13.00	@14.00
Bran, per ton	30.00	@31.00
Oilcake Meal	33.00	@35.00
Cocoanut Cake or Meal	26.00	@27.00
Cracked Corn	42.00	@43.00
Middlings	34.00	@35.00
Rolled Barley	24.00	@25.00
Rolled Oats	30.00	@31.00
Shorts	33.00	@34.00

VEGETABLES.

The vegetable market has been badly broken into by the holidays. There was quite a large carryover on Saturday for the double holiday, and a lot of inferior stock was offered Tuesday. Not all of this was closed out and the carryover for the Wednesday holiday was considerable. The new goods for Tuesday were, however, scarce and this gave an opportunity for a better clean-up than would otherwise have been possible. Peas are coming in of more uniform quality, and are quoted lower. Beans are firmer and are quoted at an advance for the best qualities of wax and string. Cream squash is down from the previous extreme prices. Okra is lower.

Green Peppers, bell lugs	20 @	35c
Green Peppers, Chili.	35 @	50c
Carrots, per sack	35 @	50c
Green Peas, lb	3 @	4c
Tomatoes: Delta, lugs	20 @	35c
Beans: Wax, per lb ..	1 @	2½c
String	1 @	2½c
Lima	2 @	2½c
Cucumbers, lugs	20 @	30c
Eggplant, lugs	35 @	50c
Green Corn, sack	50c @	1.25
Summer Squash, box..	20 @	30c
Cream Squash, box...	30 @	40c
Okra, box	35 @	50c
Celery, doz.	30 @	40c

POTATOES AND ONIONS.

Potatoes are still referred to as weak; and the large receipts, together with the succession of holidays, has not helped to make them any firmer. Nevertheless, there has been no further drop, and the consumption appears to be increasing. Onions are also weak, with 60 cents now quoted as the top price, and only the very choice stock selling at that figure.

Potatoes:		
River Burbanks	70clb	$1.00
Sweet Potatoes, ctl ..	1.50 @	1.65
Onions, New Yellow, sack	40 @	60c
Garlic, Cal., per lb ..	10 @	15c
do. Oregon	10 @	15c

POULTRY.

There is some expectation of a drop in poultry prices owing to the rather heavy arrivals and a lighter demand emphasized by the holidays. The old figures are, however, still offered. Turkeys are now coming into the market and are quoted at 20 to 21 cents for old stock and 24 to 25 cents for young.

Turkeys, old, per lb...	20	@21 c
Turkeys, young, per lb	24	@25 c
Large Broilers	19	@20 c
Small Broilers, per lb	19	@20 c
Fryers, per lb.	19	@20 c
Hens, extra, per lb...	17	@18 c
Hens, large, per lb...	18	@19 c
Small Hens, per lb..	15	@16 c
Young Roosters, per lb	20	@21 c
Squabs, per doz.	1.50	@ 2.00
Geese, per pair	2.00	@ 3.00
Ducks, doz.	4.50	@ 8.00

BUTTER.

The butter situation has shown but very little change during the week. In fact, both extras and firsts have shown no variation in quotations throughout the week. Prime firsts went up a half cent at the close of last week and have maintained that position till now.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	32	32	—	32	—
Prime Firsts	28	28	28½	—	28½	—
Firsts	27	27	27	—	27	—

EGGS.

The lassitude of the egg market last week has given way to a decided upward movement this week, in spite of the two holidays. On Tuesday, after two holidays in succession, the price of extras went up to 38 cents and the price of selected pullets to 35½ cents. Firsts are no longer quoted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	35½	36½	37	—	38	—
Firsts	30	30	—	—	—	—
Selected Pullets	30	32	33½	—	35½	—

CHEESE.

Cheese has been very firm all week, though the only advance scored is in fancy California flats, which are up a half cent.

Fancy California Flats, per lb		14½c
New Young Americas, fancy..	15	c
Monterey Cheese	13½	@14½c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter: Extra	28	29	29	29	—	29
Eggs	34	33	36	34	—	36
Cal. Cheese: Flats	13¼	14-14½	14-14½	14-14½	—	14-14½

DECIDUOUS FRUITS.

The fruit market has been more or less demoralized this week by the holidays, though there was not the slump in prices that sometimes comes with the overcrowding of the market because of holidays. Prices have been pretty well maintained throughout the week, the consuming demand having improved considerably with the close of the vacation season. Peaches are a little easier on account of large receipts. White figs are also down for the same reason. Grapes are in large supply and are selling well, the quality as a rule being good. Seedless grapes are now quoted at from 40 to 50 cents per crate. The poorer grades of blackberries are now cleaned up, and everything is now quoted at $3 per chest.

Huckleberries, lb	7 @	10c
Blackberries, chest ...		3.00
Strawberries, chest ...	1.50 @	3.00
Raspberries, chest ...	6.00 @	7.00
Apples, New Crop:		
Belleflowers	75 @	90c
Alexanders	50 @	75c
Gravenstein	50 @	1.00
Crabapples	40 @	85c
Quinces, box	75 @	1.00
Nectarines, crate	75 @	1.00
Pears, box, large	1.00 @	1.50
do No. 2	50 @	75c
Peaches, lugs	50 @	75c
do, small, lugs	40 @	60c
Plums, crate	75 @	1.25
do, lugs	75 @	1.25
Prunes, lugs	75 @	1.25
Figs: Black, double layer	50 @	65c
White, single layer..	20 @	35c
Cantaloupes, crate	50 @	60c
Watermelons, doz	75 @	1.50
Casabas, lugs	50 @	75c
Grapes: Malagas, crate	40 @	60c
Tokays, crate.....	50 @	65c
Seedless, crate	40 @	50c
Muscat, crate	50 @	65c
Black	25 @	50c

DRIED FRUITS.

With the gradual clearing of the financial situation, there is a resumption of activity in dried fruits. Generally, the tendency of prices for the last few days has been upward, the exceptions being apricots and peaches. The firming up of peaches a week or ten days ago seems to have brought in more stock than could be handled quickly, and a reaction has resulted, though quotations have not been changed. Some apricots are said to have been sold as low as 6 cents. Calimyrna figs, raisins and prunes are all on the upward trend. Reports here are that Imperial prunes, averaging 20's-30's, have sold this week as high as 10 cents, and there is one report of an 11-cent sale; but these are extreme prices for extreme quality stock. Concerning the situation the New York Journal of Commerce says: Such advices as were received by local representatives of Coast packing interests indicated a firm feeling among the latter with reference to new crop prunes. Quotations still showed somewhat of a range as to seller, but the market, on the whole, was firm and the general trend of prices, particularly on the larger sizes, appeared to be upward. The crop is reported to be drying out light owing to the lack of sugar in most of the earlier crops. Most packers are holding for a 5¾c f. o. b. Coast four size bulk basis, but some are ready to book orders at ⅛c to ¼c less than this figure. The trade in this section appears to be buying sparingly for early or late shipment, orders rarely exceeding a car or two.

In peaches the movement continues slow to Eastern markets, but holders on the Coast are rather firm in their views, believing that present prices are as low as conditions warrant. With the export outlet cut off and the outlook for foreign business dubious at best packers of apricots are disposed to encourage home trade buying by quoting unusually attractive prices. However, no pronounced decline in f. o. b. Coast quotations is to be noted.

Prices on new crop Muscatel seeded raisins are still withheld by the Associated Company and other Coast packing interests. A good business has been done in the seedless varieties and there will be no further offerings from the Coast, it is understood, until the crop is made.

Evap. Apples, 1914 ...	5	@6 c
Apricots, 1914	6	@9 c
Figs: White, 1914		3c
Black	2	@2½c
Calimyrna, 1914		5 c
Prunes, 4-size basis, 1914	5½	@6½c
Peaches, new	3	@4 c
Pears	8	@9 c
Raisins (in sweatbox):		
Loose Muscatels	4	@5½c
Thompson Seedless...	5	@6½c
Seedless Sultanas...		4 c

CITRUS FRUITS.

The market for citrus fruits is without excitement just now, the public giving most of its attention to deciduous fruits. The lemon market is firm and growers are talking higher prices, though the trade here is bearish on the proposition.

NUTS.

The announcement of the new prices for the 1915 almond crop was the feature of the nut situation this week. The prices were about two cents higher than the opening prices of last year, but the opening at high figures had been pretty well discounted and caused no surprise. It is given out by the Association officials that large orders have already been received from New York and Philadelphia houses. There seems

to be a good deal of interest in the east in Manchurian walnuts, as these are about the only imported walnuts that seem sure of reaching American markets. These Manchurian nuts are selling at New York at from 10 to 15 cents.

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nomnial
No. 2	Nominal

HONEY.

The honey market continues weak under heavy arrivals. Fourteen cents is now the top price for the best white comb. Extracted is weaker at the old quotations, and may be marked down within a few days.

Comb: White	12 @14 c
Amber	8 @10 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½ @ 6 c
Off grades	3 @ 4 c

BEESWAX.

The firmness in the beeswax situation has been followed by an advance in prices for both light and dark beeswax. Some dealers claim to be unable to get any sort of wax for less than 30 cents, but others say they have made purchases as low as 27½ cents.

Light	32 @32½c
Dark	27½ @31 c

WOOL.

The wool situation is improving from the growers' point of view, although the war still makes large buyers a little backward. The San Joaquin clip is now quoted higher. Northern wools have changed hands at from 16 to 20 cents. It is believed that the market is in line for an improvement.

Fall clip:	
San Joaquin	10 @12½c
Northern	16 @20 c

HOPS.

A quiet market is reported this week, not much buying having been done. Growers are inclined to expect higher prices; and a good many are disposed to hold their crops for a while. Some sales above quotations are reported, but these have not been of large size.

1913 crop	14 @16 c
1914 crop	15 @17½c

LIVE STOCK.

The live stock market shows a good many small changes, some of them being up and some down. Hogs are still very scarce, and some advance here is to be anticipated. Dressed meat shows no change except in the case of mutton, which is a little easier.

Steers: No. 1	6¾ @ 7 c
No. 2	6½ @ 6¾c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5½ @ 5¾c
Bulls and Stags	2½ @ 4½c
Calves: Light	9 @ 9½c
Medium	8 @ 8½c
Heavy	6½ @ 7 c
Hogs: Grain-fed, heavy	9½c
150 to 250 lbs.	9½ @ 9¾c
100 to 150 lbs.	10 @10¼c
Prime Wethers	5 @ 5½c
Ewes	4½ @ 5 c
Milk Lambs	6½ @ 6¾c

HIDES.

Hide dealers report freer buying on the part of Coast tanners, and the market as a result continues firm. Whether or not the war will result in any restriction of the number of hides reaching this Coast is problematic. Some hold that the Panama Canal will about offset any adverse effect of the European war, and that California should get its usual supplies.

HORSES.

The increasing number of horse auctions has resulted in greater activity here. On the whole the prices realized at the sales are more satisfactory than those held earlier in the year. There is no change in the old quotations; but as a matter of fact each lot, if not each horse, is sold on its own merits, the quotations being used only as a sort of guide.

Heavy drafters, 1700 lbs. and over	$225@275
Light drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

DRESSED MEATS.

Steers	10 @11 c
Heifers	10 @10½c
Veal, large	13½ @14 c
Small	15 @15½c
Mutton: Wethers	10 @11 c
Ewes	10 @10½c
Suckling Lambs	11½ @12½c
Dressed Hogs	15 c

Publisher's Department.

Here is what a subscriber to the Pacific Rural Press thinks of our new book, "One Thousand Questions in California Agriculture Answered":

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About as strong an endorsement as we could get, we think. If you haven't had a copy of this book, send for our subscription offer in connection with it.

We are a little light in our report of new subscribers this week, owing to some of our men being off duty. However, we can report 239 new subscribers added to our list during the week, "which is not so bad considerin'."

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One of the latest industrial enterprises assured California, which will give employment to a large number of skilled men, is a branch factory of the Buckeye Manufacturing Company of Anderson, Indiana. The parent concern, which is devoted to the manufacture of tractors and other farming implements, has just purchased a site of about six acres near Los Angeles and is erecting a brick factory building, costing in the neighborhood of $35,000. This is merely the first unit of the plant which will be enlarged from time to time. A capital of at least $100,000 will be employed in its operation.

The branch factory, to be known as the Lambert Manufacturing Company, will have charge of all sales on the Pacific coast and west of Denver.

The first product of the California factory will be the Lambert orchard, farm and road tractor, but it is expected that in a short time its activities will be extended to the manufacture of other farming implements.

The final details of this arrangement were made by J. W. Lambert, treasurer and general manager of the eastern concern, who came west recently for this special purpose. S. J. Smith, formerly head of the Smith-Booth-Usher Company of Los Angeles, will have entire charge of the western division.

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How potash produces starch in plants.

Why phosphorus is necessary for plant-life to live.

Necessity of nitrogen in the soil.

How plant-life cannot utilize the elements of the air if there are not sufficient mineral elements in the soil.

How plants feed.

What humus is.

The theory of cultivation.

Bacteria in the soil.

What available soil fertility is.

Maintaining and increasing fertility.

And 100 other points not mentioned in this list.

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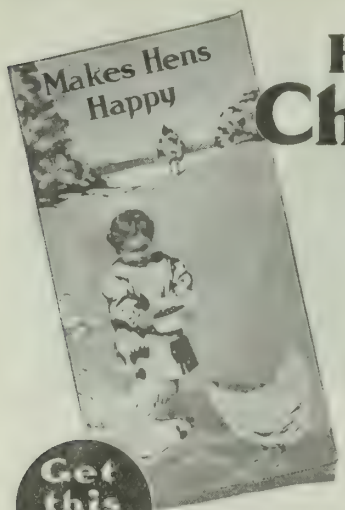

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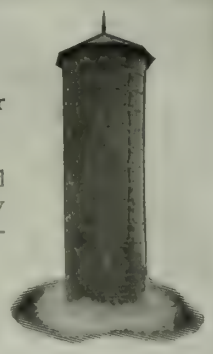

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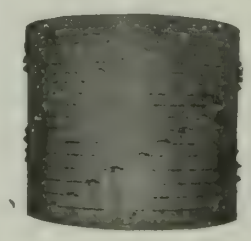

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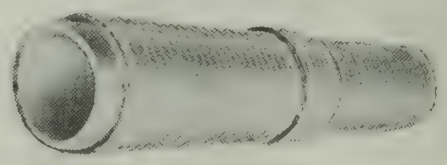

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THE
PACIFIC RURAL PRESS

Vol. LXXXVIII—No. 12 San Francisco, Saturday, September 19, 1914 Forty-fourth Year

Santa Clara Apricot Pruning.

[Written for the PACIFIC RURAL PRESS.]

If you couldn't thrill from center to circumference on a ride with G. E. Merrill through the Mt. Hamilton foothill fruit country, there is something wrong with you horticulturally and artistically. For not only is there an ever changing vista of hillside orchards, but the great level Santa Clara valley full of beautiful farm homes and finely checkered with fruit trees lies waiting far below to receive you, and beyond them westward are the greener hills rising to the mountains of the coast range. The Mt. Hamilton foothills do not receive as much rain as those on the west side, but where Mr. Merrill's 40-acre fruit ranch lies, about 700 feet above the valley and 8 miles from San Jose, they get three or four inches more rain than in the flat. After you have climbed 200 or 300 feet you are in the thermal belt where apricots thrive, even on the adobe soil of that section. There is no fear of frost, the drainage for both air and water is perfect, or perhaps too free, and well-water may be had at 12 to 30 feet. They don't irrigate there, though times come when they might like to. So they, as well as many lowland apricot growers, prune a month or two after the fruit is off to reduce evaporating leaf surface and save moisture.

APRICOT PRUNING IS NOW ON.

(1) Well cultivated and ready for heavy pruning in fall to stimulate fruit wood.

(2) Poorly cultivated. Prune only in winter to stimulate wood growth, fertilize and cultivate.

Their system of pruning, as described by E. B. Williams, one of the oldest apricot growers of that region, and by G. E. Merrill, who has seen the systems of pruning as practiced all over the State, is a little different from that on the level. Blenheims are most common in Santa Clara county and comparatively no others are being set out or grafted in.

These gentlemen believe, as most everyone does, in allowing sunshine to penetrate every part of the tree. But instead of shaping the crown like the top of your hat as does Jim Pan, trusted Chinese pruner for W. C. Losse and his father, they think it more effective to aim to leave an inverted cone of open space in the center of the tree, perhaps three feet across in an 8-year-old tree. "It lets the sun down to the inside and does business there, I tell you. It vitalizes the buds," says Mr. Williams. This is [illegible]rent from the style described in the Pacific Rural Press [illegible] [illegible]ober 25, 1913, as being used at Winters. The walls of th[illegible] [illegible]" mentioned there are in the Santa Clara valley syst[illegible]ed with leaves and fruit wood two or three feet thick.

7-1-16
State Library

Since the apricot grows so luxuriously and puts out so many of the multi-budded fruit spurs, especially on wood two seasons old or over, the fruit should be thinned more than most any one has the heart to do. So the best way to thin the fruit is to thin out the spurs in pruning, or to cut them back part way. Since the same spurs may bear several years, through "a cycle of existence," as Mr. Merrill puts it, growing only an inch or two of new wood per year, and since in their later bearing seasons they are not so vigorous, the oldest ones and the least healthy should be thinned out first. Plenty of new ones will come out.

It often may be observed that a bare twig eight or ten inches long or more will throw out a spray of fruit-bearing twigs. Bearing in mind that far more fruit is likely to set than can be matured to proper size and sweetness, these sprays are entirely cut off where there are plenty of fruit-bearing spurs close by on main limbs. But if they project into an open space in the side of the tree, half of the spray limbs are cut off, or it may all be left if the vigor of the tree as shown by large numerous dark colored leaves seems great enough to mature the fruit. Mr. Williams got a "whale of a crop" on 4-year trees two or three years ago, because he left the entire sprays on, and received 16 cents for the dried fruit. He intended to take off the entire sprays the next season, but put it off, and is doing it now.

The prunings in apricot orchards are as much as eight or ten feet long. Since this is so much wasted tree-energy, it would seem desirable to check it by all feasible means and turn that energy to fruiting. This is accomplished to a considerable extent by summer pruning the suckers and early-fall pruning the entire trees. Summer pruning of the main limbs would only induce extra vigorous new shoots, but when done in September, the new growth does not start so readily, and the object is accomplished, of shocking the tree, by reducing the leaf surface, to induce the setting and nourishing of fruit buds.

(Continued on page 280.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

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Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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R. E. Hodges
J. C. Loomis - - - - Assistant Editors

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 15, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka	.08	.32	.61	62o	44o
Red Bluff	.00	T	.17	96	60
Sacramento	.00	.00	.12	94	56
San Francisco	.00	.02	.01	92	54
San Jose	.00	.00	.12	94	44
Fresno	.00	T	.00	98	54
Independence	.00	.16	.00	88	40
San L. Obispo	.00	T	.09	90	48
Los Angeles	.00	.01	.00	78	54
San Diego	.00	.00	.00	70	54

T means trace

The Week.

Edward Berwick of Pacific Grove and this writer belong to a disappearing generation. As is common with men rich in years and somewhat accustomed to posturing to the public eye, we are both cranks, but all cranks are not the same cranks: some turn to the right and some to the left, and some are probably describing circles in the fourth dimension—for there is surely something in the movement of cranks which the science of mathematics has not yet fully caught up with. We claim the rank of crank for Mr. Berwick and for ourselves, because some wise man has said that the world is moved by cranks, but we have to concede that Mr. Berwick has moved the world a whole lot more than we have, for he surely was largely instrumental in putting over the parcels post on the American people, and he has probably only slipped one cog in putting over universal peace on the world, for we believe his next hitch will do it. As for our own achievements as a crank we cannot claim to have put over anything on the world, so we have to try to put over one on Mr. Berwick.

Although it requires a mixed metaphor to do it, we must claim that it is one of the functions of a crank to stem the tide. This mixture is particularly necessary in Mr. Berwick's case because when the moon is very full the high tide in Monterey Bay splashes against his front gate at Pacific Grove and probably that is the reason why some of his fulminations on the subject of farming have the odor of stale clams rather than the perfume of the hay field. This environment probably also accounts for his backing around so much agricultural moss rather than fork-fulls of alfalfa. But for all that, Mr. Berwick has always been a very good stemmer, as we have admitted above in the case of his three great "p's"—Parcels Post and Peace—and it is with something of sadness that we see him rushing out into another tide, which he surely cannot stem, and that is Public opinion for the advancement of farming. And, of course, in thus impeaching Mr. Berwick's success in his latest venture, the penetrating reader will observe that it is one crank trying to turn against another and claiming no greater virtue in the effort than a clearer comprehension of what will make for the advancement of agriculture and fuller recognition of the determined attitude of the public mind toward it.

Relation of Agricultural Papers to Farm Advisers.

Mr. Berwick has just addressed to the public a brief advisement which we shall fully present herewith, but in installments for the convenient injection of comments, according to its varied suggestiveness. The following is his leading contention:

There is a proposal afoot by which certain persons are to be maintained by the tax-payers under the plea that they are so competent in farm lore that their services as advisers to working farmers would be invaluable. The present farm-advisers are very largely the agricultural papers. Have these failed in their duty? Is the real farmer asking any other advisers?

Circular 112 (January, 1914) of the College of Agriculture, University of California, lets in some light. After stating (p. 1) that "much * * agricultural information has been in such form that it was difficult for farmers to obtain it." After asserting that a farm adviser must be a "man trained in agriculture, usually a graduate of an agricultural college, who has had some practical knowledge in the broad phases of agriculture," etc., he must also be an enthusiast, "of tact, of energy, of real desire, to achieve results, etc." With all this equipment, why does not this accomplished person take a farm himself and by demonstration on his own land, and with his own balance of huge profits, advise his neighbors in this most convincing of methods? Instead of this his "salary (p. 3) is paid by the College of Agriculture" (which ultimately means the taxpayer) and "his expenses by local agencies" (the same ultimate).

Concerning the implied suggestion that the farm advisers are intruding upon the field of the agricultural papers, we need only say that, so far as our observation goes, they are being made very welcome. We have not seen a farm journal which doubts their desirability: in fact, if it had not been for the continued advocacy of their constitution by the agricultural press, it is doubtful if it could have been realized. And this advocacy has proceeded upon a clear conviction that whatever ministers to agricultural progress smooths the pathway of the agricultural press which is its handmaiden. If one doubts the sincerity of this altruistic attitude on the part of the agricultural press, it is easy to suggest another which no one will question, viz.: that the agricultural papers are thoroughly in favor of farm advisers and do not resent their activity in their field of agricultural enlightenment because the editors know that there will be no more abundant and disinterested exhortation to read the printed word about farming than these same advisers will continually cry out to their clients and the public generally.

Real Farmers and Near Farmers.

Mr. Berwick surely has a penetrating gaze: if he had not he would have poor equipment as a crank. We admire particularly his insight into the fact that the agitation for the appointment of farm advisers is largely the work of near-farmers. Although we are endlessly insisting that the advancement of farming and increased success in the vocation must be achieved by the real farmers and not by the approximations on the propinquists, we are free to admit that real farmers need to be goaded to their task continually by the thorns in their sides, which the near-farmers really are. This has always been the way of it. Ancient Rome would never have attained imperial grandeur had not Varro, Virgil, Cincinnatus, Cicero, and the rest of the near-farmers of the old Campagna, pelted their real-farmer neighbors with cantos and cabbages which set forth the glories of a new agriculture, better than the old. If we had time to paddle down the stream of time and note on its banks the tokens of better products, higher prices and better life for farmers, progressively attained all the way from Horace to Horace Greeley, we should find the dreams, the disappointments and the financial disasters of near-farmers were the spurs which kept real farmers awake to achieve better things. What do we lose then if we admit that farm advisers are the latest foolishness of the near-farmers? We lose nothing, for both in higher farming and the higher life "it hath pleased God by the foolishness of preaching to save them that believe."

We are of course exaggerating this phase of the matter because this is the place where Mr. Berwick chooses to place great emphasis. It may be pertinent at some other time to show that, as a matter of fact, real farmers are calling for this service although he thinks they are not, and they are testifying to the practical value of the advice given them in a way which cannot be questioned—but that is too serious an aspect of the case to figure in this little game with Mr. Berwick, which we are playing for our own diversion. For this purpose, therefore, we grant Mr. Berwick's contention that the demand comes largely from near-farming interests and we cannot deny ourselves the glee of the **argumentum ad hominem**—for, would you believe it, Mr. Berwick is a near-farmer himself and, by his present attitude, is at outs with his own class. He is a genial, wise, well-to-do citizen of California, who laid in farming the foundation for doing well in other things and has now about as little claim to speak as a real farmer as we have ourselves—though he is always welcome to speak as he desires, for he is never guilty of a dull utterance. In this case, however, he speaks offensively to the traditions of his own class, for near-farmers are always joyfully progressive, and he speaks incorrectly from the point of view of real farmers, for they are acting differently—as it may be worth while, some time, to show.

Why Uncle Sam Pays the Freight.

Mr. Berwick very properly calls attention to the public cost of the adviser's service and questions the tax-collector, as every careful student of public expenditures ought to do. When we state that the greater part of the cost of the advising system proceeds from the national government and that if California should eschew this service it would lose that much of Uncle Sam's bounty and refute his nationa'

purposes, we do not use the fact to darken Mr. Berwick's conception of the local burden, but to indicate that the promotion of agriculture is accepted by the United States as a national responsibility, and as that responsibility is recognized by all civilized nations as a most necessary and worthy token of the possession of civilization itself, it seems rather silurian and unwise to oppose it. And though this attitude of governments toward agriculture has been more clearly enforced by statesmen during the last century of Europe and America and is now more resolute than ever, it must not be forgotten that the dynasties of Ancient Egypt assumed it and the Roman Empire made it a pillar in their imperial structure. All the civilized world has known, and does now know, that public money set apart for the general advancement of agriculture and the individual prosperity of the farmer is the foundation upon which all activities of the nation, including war itself as a crucial test of national strength, must rest. Nor is this system of "farm advisers" new or original with us—except in name. We saw functionaries of the same kind, carrying different names, most acceptably working in all the European countries we traversed last year—all the way from Italy, though the present war zones on the continent, to Ireland. They are supported widely, just as our advisers are, by co-operation between the government, the near-farmers of the nobility and the real farmers. In some places they have been operating for decades. There can be no question of their service in increasing the food supply of the nations and in advancing the prosperity of the individual farmers who produce it.

California Farmers Want Advisers.

But we are so garrulous, as befits an old crank, that we have almost forgotten to set forth the closing portion of Mr. Berwick's very succinct contention, as follows:

Page 8 of the University Circular of January, 1914, then gives a boastful boost of the alleged results of one adviser's work. Among other things certain farmers are advised they can double their yield of carrots, beets, alfalfa, etc., by top-dressing their land with 1500 lbs. of lime per acre, that they can produce this lime, which now costs $16.00 per ton, for $2.00 per ton, etc. The obvious rejoinder is if this man knows how to do all this why does he not do it, instead of accepting a paltry $2.000.00 a year from the tax-payers? It is safe to say the farmers of the country would learn much quicker if they saw him doing these things than they would by hearing him talk about them. Seeing is believing! The farmer's papers have printed the virtues of lime for a century past. Beware of lengthening the list of tax-eaters.

To this it need only be said that Mr. Berwick entirely misapprehends the function of a farm adviser. He is a teacher. He is not an investigator nor a demonstrator except in a very limited way. It is the function of the Experiment Station and all other research agencies to secure material for his use: it is the duty of the College of Agriculture to furnish the more important demonstrations which then become teaching-material to be presented in conformity to local conditions. The adviser, too, is a teacher, who is always learning, always throwing light from individual successes upon individual failures—a clearing-house of tested knowledge particularly useful in his parish. Now why a man who can do this does not go to actually doing the profitable things he knows of is an altogether irrelevant question. If we should try to argue the matter seriously with Mr. Berwick we would of course remind him that to do things requires capital and time and nerve tissue, and one who gives himself strenuously to the business of farming cannot be at the same time a teacher thereof—except as he might pass a few words over the fence to a passer who stopped to admire the greatness of his crop. Such desultory teaching would not at all meet the present demand for instruction—although we do not mean to belittle the value of it, so far as it goes. As to the personal choice of these farm advisers to teach rather than to practice—the question is immaterial. We have no more right to ask that than we have to ask Mr. Berwick why he prefers the sad sea waves of Pacific Grove to the smiling meadows of the Carmel Valley. There may be many reasons and all of them none of our business.

Seeing Is Not Believing.

Mr. Berwick uses an old proverb while at the time knowing that seeing is not believing nor is believing seeing. If we remember correctly, Mr. Berwick bought some land once without seeing it on the belief that a town would come that way, and we are glad to add that it did come—with all the joys thereof to Mr. Berwick—and yet he tries to preach that sight is the chief ground of belief while as a fact the great body of human belief on any subject you may mention does not rest on sight at all. There are very few who can see: there are millions who can believe and be helped toward realization of that belief. That is the teacher's function. People linger in darkness, not because there is not truth enough but because there is not teaching enough. As Mr. Berwick says, the virtues of lime have been known for a century. Really, it is much longer than that. Twenty-five years ago or more, Prof. Hilgard told the very people indicated by Mr. Berwick's quotation above, that their soils needed lime for their betterment, but it was not until the teacher dwelt among them that they realized the advantage in their crops. It is the appreciation of this crying need for a teacher at the elbow which impels governments, publicists, near-farmers and real-farmers to join in securing qualified farm advisers. All who are called thereto may not be chosen in the effort—but you can no more arrest the movement by over-writing the cost of it than Mr. Berwick can sweep back the waves which sing his lullaby and, between ourselves, we have no idea that Mr. Berwick really desires to do one or the other.

Queries and Replies

Subsoiling in Orchard.

To the Editor: I am thinking of doing some subsoiling and want a little advice. The trees are 26 feet apart and I would not go closer to the row than 8 feet. I plan to put three furrows from 16 to 20 inches deep down between the rows of trees. The ground has been irrigated for the last 10 or 12 years and when you get down seven or eight inches it is very hard. The trees look well. Do you suppose it would injure the trees to run those furrows so deep and cutting the roots?—J. B. B., Winters.

We should anticipate benefit rather than injury. You can, however, open a way for rainfall to the lower soil about as well with two deep furrows as with three and this would enable you to begin your experiment by keeping 10 feet away from the tree row. If you wish to be still more cautious run the furrows one way this year and the other way next year. Start in, anyway, and be bold or cautious according to the amount of root cutting you find yourself doing.

Leaf Glands and Peach Almond.

To the Editor: Can you tell me the use of the little glands you find on the leaf stem of cherry at the base of leaf? Also, what is the peach-almond root? Is it not a hybrid between peach and almond or is it an almond only? It is a very strong, thrifty grower.—M. S., Vacaville.

We never heard of any philosophy to account for these glands nor to prescribe any functions to them. The only significance we remember as attributed to them is that of Downing, who found that peach varieties having leaves without glands are more subject to mildew and perhaps would argue that the presence of stem-glands indicated greater vigor in the variety. As for the peach-almond, it has been observed as occasionally occurring for decades as a chance-hybrid presumably, but Mr. Burbank was, we think, the first to actually produce it intentionally. His experience would seem to demonstrate that it is actually a cross between the two fruits. The strong growth you notice called attention to it many years ago as a desirable stock for the peach, but we are not aware that much propagation has actually been done upon it.

Apricot on Peach.

To the Editor: Can an apricot be grafted to a peach? And if so, will it make a good union and fruit well?—V. P., Vacaville.

It surely can be: on a good peach soil there is probably no better root for the apricot. Your Vacaville district has many orchards on peach root and whenever planted on soil which did not hold winter water standing in it, they have succeeded. Where the soil is too retentive the myrobalan root is desirable. One of the oldest orchards in your district and which we saw in thrifty condition some years ago was planted by J. E. Pleasants about 1852. He got peach pits from Yount's old place in Napa Valley and worked apricots on the seedlings. At 40 years old this orchard was in good shape. Since then we have not seen it.

This refers to trees worked over young. If you refer to grafting over old peach trees that is a more difficult matter, for old peach bark is contrary and a little extra care is required in grafting; if the trees have become unthrifty and you graft on large limbs you may have a very poor and ugly job of it and your unions may not be good. Still there are good trees made in that way if it is done right.

Soft Orange Scale.

To the Editor: I am sending you several orange leaves. Will you tell me what the trouble is and what to do?—L. E. J., Lincoln.

The leaves show "soft orange scale." This is not hard to kill, for it is not sealed down tight. Spray thoroughly with kerosene emulsion properly made (the formula for it you will find pasted in your hat) and you will clean them out. Spray with care so as to wet every point on the leaf and twig surfaces and do it now—and later again if you can find survivors.

Work of Fruit Distributors.

[By Chas. E. Virden, at Fruit Growers' Convention.]

Twenty years ago the state of California sent out 4293 cars of deciduous fruit, consisting of 162 cars apricots, 180 cherries, 1010 grapes, 1289 peaches, 465 plums 1187 pears.

Last year there was shipped from this state 13,313 cars of deciduous fruit, consisting of 158 cars apricots, 231 cherries, 6363 grapes, 2359 peaches, 1706 plums, 2496 pears.

(Up to Sept. 1, 1914, 8534 cars had been shipped east as compared with 7634 in 1913 to the same date. —Ed.)

Twenty years ago the tonnage sent out was distributed in less than 100 markets of the country and to a very great extent the cars were distributed on a consigned basis.

Prior to 1902 even with a comparatively small tonnage, the results obtained in the shipment of deciduous fruit proved very unsatisfactory to the growers and they realized but very little for their fruit and it was found necessary to form some sort of a distributing organization. In 1902 the California Fruit Distributors was incorporated with the sole object of acting as a central marketing agency for the growers, packers, and shippers.

The capital of the corporation is nominal. No stock dividends are paid or profits undertaken. The organization maintains its general headquarters at Sacramento and at this time consists of twelve shipping companies who operate in the state. A number of these companies are composed solely of growers. The Board of Directors consists of one member from each company and at this time eight of the number are actively engaged in the growing of fruit. The Board of Managers, consisting of six members, are selected by the Board of Directors. The Board of Directors hold monthly meetings. The Board of Managers meet weekly during the operating season. The business of the organization is in the hands of a General Manager subject to the direction of the Board of Managers and Board of Directors. Each and every member of the Board of Directors has an equal voice and an equal vote no matter what their tonnage may be.

The operation of the California Fruit Distributors is a direct benefit to the grower and in no way is it a tax upon the grower as the revenue necessary to maintain the organization is derived from the shipper who makes the usual charge of 7 per cent for the handling of the grower's business. This commission charge was not changed with the advent of the organization and out of it the California Fruit Distributors must be paid by the shipper. Such shipper pays the organization only the actual cost of operation in proportion to the tonnage that the Distributors handle for him.

The organization has been steadily engaged in creating f. o. b. markets and today the fruit of California is shipped into approximately 250 markets of the country and this distribution is constantly being widened. Selling agents in all of these markets and general traveling salesmen are assisting dealers to establish and create a demand for California fruit.

Since 1902 much has been done by this organization in bringing about much better transportation and facilities for the handling of deciduous fresh fruit shipments to the distant markets. We have secured a more regular and dependable service. Prior to 1902 the time to Chicago was approximately ten to fifteen days. Today we are securing regular service that enables us to sell fruit in the Chicago market on the morning of the seventh day and in the New York market on the morning of the tenth day. We have better icing facilities. We have a better tracing system, so well perfected that we are in direct touch with the movement of each and every car, enabling us to make immediate diversions. Diversion rules are broader. Refrigeration charges have been materially reduced. Where we formerly paid as high as $90.00 per car, today we have a flat rate (for example to Chicago of $75.00) for pre-iced cars from most all points. We were formerly penalized for the melting of ice during the time of loading. This we have succeeded in having eliminated.

The freight rate to New York a few years ago was $1.50 per hundred pounds and to Chicago $1.25. Through our efforts we obtained a reduction to $1.15 to practically all eastern points. We obtained a consolidation rate which has proved of great benefit to the industry in the assembling of fruit from different places on a single car.

We have obtained from the express companies a one-stop-in-transit privilege for the purpose of selling. We have been and are now engaged in urging upon the railroad companies the adoption of a one-stop-in-transit privilege for partial unloading. This, if granted, will enable us to develop a lot of smaller markets. We are continually seeking the co-operation of the railroads of the country for general betterment in the handling of the fruit tonnage.

Since the formation of the organization in 1902, the California Fruit Distributors have handled 79,320 cars of fruit, which is a little in excess of 60 per cent of the total tonnage moved during that period; and through the efforts of the organization, the deciduous fruit business of California has been placed on a far more safe and stable basis than it occupied prior to 1902.

Our members are at all times performing the most efficient service possible for the growers by working for standardization, improving the pack, quality, loading facilities, etc. As soon as the cars are loaded, the fruit passes under the control of the California Fruit Distributors which acts as a neutral central selling agency treating the fruit of all growers alike whether they are large or small; performing the same functions for each and every one, and having in mind but one thought and effort to obtain the very widest distribution on a safe and sane basis, keeping every market fully supplied, not over supplied, not under supplied.

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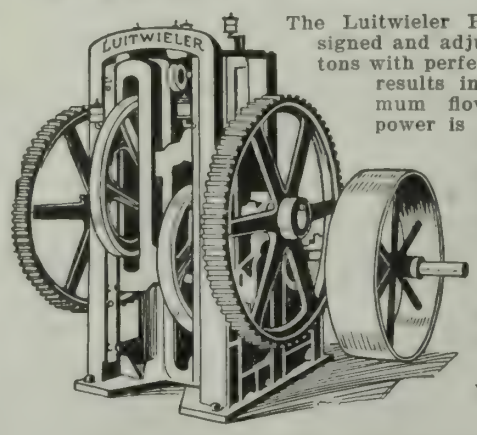

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Gophers in the Orange Orchard.

[Written for the PACIFIC RURAL PRESS by J. E. Adamson, Pomona.]

The ground squirrel is a nuisance, but not to the extent nor in the same manner as is the gohper. There is no tendency on the part of the squirrel to do any more damage to the roots of the trees than would come from the drying out of the ground under the tree from the exposure to the air in the large opening made by these industrious rodents in the effort to establish a home.

In the orange orchard the only other damage I have observed is a very limited eating of fruit. One good remedy for this pest in the orchard where irrigation is practiced, is to run a good flow of water into the hole and when the squirrel appears be ready for him with a good terrier dog backed with an active man with a shovel. The latter is quite often needed, as there is generally more than one animal in a hole, and things get too lively for one dog. I have seen as many as six good, lively squirrels come out almost at once and a fine scramble was the result.

Among the walnut trees the matter is quite different, as the little rascals have a great desire to lay up a store for a time when there are no nuts and store considerable quantity of the best nuts.

In the deciduous orchards they practice the same habit of storage, but the only part of use to them is the pit, and they go to much trouble to rid the pit of the fleshy part of the fruit, which of course would not keep.

One important thing to remember in regard to the gopher in the orchard that does not apply to the ground squirrel: The gopher will bring swift and sure damage to trees, especially citrus trees, if he is allowed to stay; and the only sure and safe way to act is to get rid of him as quickly as possible. He is a root eater by preference and will soon girdle the tree where the bark is tender just below the surface of the ground which if serious will work the end of the tree in a short time.

We see from time to time all sorts of sure cures for the squirrel and gopher pest, and no doubt all of the methods have some merit more or less. It is safe to say that all or nearly all of the various methods have often proved a failure, for no other reason than that the innate sense of these little animals leads them very soon to the knowledge of any system which tends to make serious inroads into the tribe.

The use of poisoned grain is perhaps the easiest means of killing off large numbers in a short time, but where food is to be found in quantity it will soon be found that the grain is left untouched, especially if it has been put too near the hole.

Some say that the squirrels will take the poisoned grain and put away in the store house and then get fat on it. This is most likely an exaggeration, but be that as it may, there are many people who do not have much faith in poisoned grain as a squirrel cure.

Then there have been the various forms of smokers. The writer bought some experience in that line a few years since. It is not a pleasant memory to recall the morning spent going the rounds of a considerable settlement of ground squirrels, pumping each hole full of gas supposed to bring the inmates to an untimely end, only to have the dream rudely shattered after a short time by finding the various holes reopened and the inhabitants seemingly as good as new.

Next to be tested was the explosive type of gas producer. This seems to give good results but is quite expensive, and gets less than 100 per cent of a kill, which will never do when the breeding qualities of these animals are considered.

Where the number is very large a man with a shotgun will make a great big hole in the population in a short time, but this method is too slow and expensive as the members of the tribe become scarce and timid.

What seems to be a new and very successful method has been found to give a cheap and sure means of cleaning out the scattered remnant of a squirrel town after one or all the other schemes have been worn out. The plan is to use an ordinary gopher trap of the wood box type, setting it on top of the ground near the hole, but not in the mouth of the hole, as that makes the animal suspicious. It is best to stake the trap as the squirrels are very strong and in the event of only partial choking the trap would be carried off if not held.

It has been found best to use corn for bait, because when any lighter grain was used the ants carried it away and left the trap useless for squirrel catching.

One party using only three traps caught eight squirrels in one morning, giving only a little time from other work. There is also the added advantage of knowing you have got the squirrel, which is not the case with any poison method.

So far as is known to the writer, any credit for this innovation is due to Mr. John S. Adams of Pomona; at least he was the first to use it here and brought it to the attention of other growers.

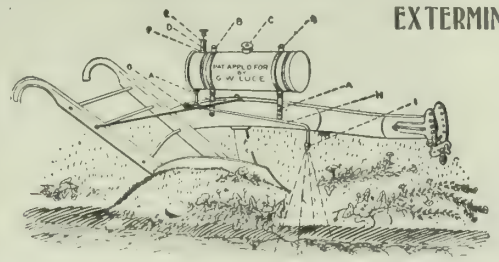
The problem of gopher catching is along the same general lines as that of the squirrel as between the use of poison or traps, with this difference: The gopher cannot be caught with poisoned grain as he is not a grain eater in the strict sense, but must be baited with fruit or apples or other firm fleshed variety, or roots, as potatoes, carrots or turnips, or dried fruit of the class of raisins.

The most approved method of feeding the poison seems to be to impale the doped bait on a short stick or wire and after digging out the hole push the bait well into the open hole, and close in with the earth, leaving the bait to the fine discrimination of the wise occupant of the burrow as to whether it is best to eat it or cover it up with earth.

Of the several forms of traps on the market the wood box is about as easy to set as any. The principal point to care for is to be sure there is no light allowed to enter the trap near the end that the gopher is expected to come in at, because as soon as a well brought up gopher sees light where he knows he left it dark he brings along a load of loose dirt and proceeds to tightly and very thoroughly plug that hole and with it the trap.

The various styles of wire traps are intended to be pushed into the hole, the open end being covered with some loose material such as grass or leaves, to shut out the light.

As in the case of squirrels, when you find him in the trap there is considerable satisfaction in the knowledge that you have the gopher beyond the shadow of a doubt.



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How the Pea Aphis "Boards Around" and Grows.

A few weeks ago a Lake county editor in fond admiration for some of our choice editorial utterances designated us as "the plant-louse editor," and we surely have to do something to justify the gentle tribute. Although we cannot claim to rank at all with our contemporary as an authority on Pediculus capitis and vestimenti, because one has to carry those "interestin' little critters" around on his person to adequately study their habits, we do enjoy the tribute of a pediculus expert to our knowledge of the aphis family.

California had an unusual run of plant lice or aphids last winter and spring because the winter was mild and moist and the spring overcast and free from hot northers. Under such conditions, plant lice are active all winter and in the spring rival in numbers the roll calls of European armies. The coolness which favors the multiplication of aphids retards the activity of ladybirds and this gives the aphids still longer chance to be destructive. Neither all plants of field, orchard and garden had them in unwonted numbers. One of the most destructive was the pea aphis, which infests field peas, garden peas and sweet peas and caused this year unusual losses. This pea aphis has been carefully studied and its modes of life are very interesting, as popularly described by E. Dwight Sanderson in his book entitled "Insects of Farm, Garden and Orchard" as follows:

Life History. — The aphides pass the winter on clover and vetches, and often increase upon clover so as to do it serious injury. Where peas are available the winged females usually migrate to them about the time peas are 6 or 8 inches high, and give birth to live young, which develop into wingless viviparous females. These females, as do those of subsequent broods throughout the summer, give birth to live young and reproduction goes on at a rapid rate. According to the observations of Mr. R. L. Webster, in central Illinois, an aphid becomes grown about eleven days after it is born, lives about twenty-five days and gives birth to about fifty young, though under favorable conditions over one hundred are frequently born. Sixteen generations have been observed from March 23rd to October 4th. Winged aphides develop as often as the food-plant becomes overcrowded and it is necessary to migrate to avoid starvation.

By midsummer, with the harvesting of the peas, most of the aphides upon them have been destroyed by predaceous and parasitic insects and disease, and they are not observed during late summer unless they have been subsisting on clover throughout the season, when they sometimes destroy the crop in August, as has been observed in Illinois. In early fall they often become common again on late garden peas, and late in October they migrate to clover. Fewer young are born as the weather gets colder in the fall, and the aphides never become numerous enough to do any injury at that season. Late in October and early November—in the Middle States—as the aphides are migrating to clover, winged males appear, and some of the wingless females developing on clover produce eggs. The winged males are similar in size and color to the migratory females, though slightly darker, and have three or four dark spots along the sides of the abdomen and a deep brown dash on either side of the back of each abdominal segment. The oval eggs are about one-fiftieth inch long, jet black, and are deposited on the lower leaves or stems of clover, and hatch as it commences to grow in the spring. In Central Illinois they were observed to hatch March 23rd and the young became full grown and commenced reproduction on April 5th, living until May 12th. In Southern Maryland and further south many of the viviparous females live over winter on the clover and commence to reproduce again in the spring, no eggs having been observed in that latitude, but in central Illinois and northward the females are probably entirely destroyed by the cold and only the eggs survive.

(Continued next week).

WINTER VEGETABLES FOR FOWLS AND MEN.

To the Editor: Please tell me what green food, good for pullets, can be planted at this time of the year on a southeast slope in Castro Valley; also, what garden truck can be planted as late as this. Our ranch is a sunny hillside of three acres on which we have about 200 pullets and wish to raise our own vegetables and berries, as well as green food for the hens. The soil is very hard—it is said to be adobe—but it seems to be fertile.—New Comer, Haywards.

(It is not late in the season; it is early. The gardening year in California breaks into the calendar on July 1; so you are just a little ahead of the autumnal spring time which is ushered in by the early rains. What can be done with this kind of double-spring time year and how to do it is fully discussed in our book on "California Vegetables."

To be sure of green food for poultry during the fall and winter months, you must, of course, choose plants which will be hardy against frost. Fortunately there are very many plants of which seed can be sown and plants set out as soon as the soil gets deeply wet by the fall rains. This point is essential, for a surface wetting such as might be had by an early September rain may not be enough to carry the plants through several weeks drought which may follow. Obviously, if you have irrigation water the land can be wet down now and operations begun with full confidence.

You can grow by starting now, or as soon as the ground is in good conditon, all vegetables except those which are strictly tender, like tomatoes, peppers, squashes, corn, beans, etc. Even those which are counted "half hardy" in eastern catalogues are usually safe in such a place as you occupy but must be kept going along well by good cultivation during the intervals between early rains.

Your soil should be improved for garden purposes by working in as much green stuff and stable manure as you have available. The use of lime and sand also tends to promote friability. Good things to grow in quantity for fowls are beets, cabbages, peas. Vetches and early sown grains are often very useful. Alfalfa can also be successfully started where frosts are absent during the autumn months.—Editor.)

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The Varied and Adaptable Plum.

(From address at the State Fruit Growers' Convention by H. C. Blake, Vacaville.)

There are but three or four localities in California very extensively engaged in the shipping plum business. They are as follows: The Sacramento river district, comprising that portion of the river territory located between Sacramento and Rio Vista, and including the section around Lodi; the Vacaville district, comprising what is known as the English hills and Lagoon valley and the Vaca Valley proper; and the hill section comprisng the Newcastle and Placerville districts.

These three localities are very extensive and successful plum growing districts, but the conditions obtaining in each are entirely different from the other. On the river you would find a deep, rich, sandy sediment, loamy soil with plenty of water for irrigation. In the Vacaville section, good judgment must be exercised in the selection of a place. Secure a deep rich loamy soil, though if very well drained and other conditions are attractive, a heavier soil may sometimes be selected; but it must be treated accordingly. In the Newcastle district you will find a decomposed granite soil, entirely different from either of the other localities mentioned, and requiring different treatment.

In the past the Tragedy has been the great favorite plum on the river, but many other varieties succeed well. In the Vacaville district it seems that almost every variety known to mankind is being tried out to the full limit. Of the 150 different varieties of plums shipped last season by the California Fruit Distributors, Vacaville seems to have been represented in almost every variety. The Newcastle district runs strongly to Burbanks, but follows very closely with any new born favorite. Placerville confines her shipments almost exclusively to the Hungarian.

During the last few years so much advance has been made in the creation of new and improved varieties that it has stimulated the grower's desire to sell his plums when the market is as bare of fruits as possible. This is secured by being first on the market. Many standard varieties now considered comparatively old will always command a place in any market, such as Tragedy, Burbank, Wickson, Climax, Hungarian, Grand Duke, Giant, and Diamond. But many new and valuable varieties are now competing for first place on the list of good shippers. Prominent among these are the Beauty, Formosa, California Blue or Vacaville, Gaviota, and many others; some yet unnamed which I am not at liberty to discuss. One very promising variety, originated by my neighbor, Richard Burton, which he has called the Earlianna, was entirely harvested by the first of June. It is a good sized plum, splendid color and shape, and an excellent plum for the table, a good bearer and the best all-round early blue plum. There are only about 30 trees of this in existence and no grafting wood is for sale. A neighbor who is growing over one hundred different varietes, recently remarked that he would confine his energies to about three varietes, all new, such as Beauty, Formosa, California Blue or Vacaville; and after inspecting the orchard his judgment seemed to me to be wise.

I think it wise to eliminate all of the second- and third-rate varieties, except where absolutely necessary to retain them for pollenizing better varieties. On account of the great variation in the time of blossoming in different seasons, varieties requiring special pollenation are rather unsatisfactory.

Duplication of names.—A very unsatisfactory condition obtains on this coast in the naming of fruits. It is bad enough to be confused with a thousand or more distinct varieties, but when we add to this trouble by insisting on calling some well defined variety by four or five different names we are surely in need of a guardian. If this matter could be handled through the American Pomological Society or some state society in connection with the national society it seems to me it would simplify one of our most perplexing difficulties.

We now have the United States and Canada for market, as no other portion of America grows successfully the fine varietes grown on the Pacific Coast. And by means of the Panama Canal, we may annex the markets of Europe with an excellent refrigerator steamer service direct from our seaports.

DRIED FRUIT MARKETS.

[Written for the PACIFIC RURAL PRESS.]

One of the most competent authorities on the Santa Clara prune situation says there are only 4,000 or 5,000 tons of prunes still held by the growers in the whole district including San Benito county. And the packers do not have the rest of the crop, which is mostly in the hands of the jobbers or farther along toward consumption. Under these circumstances, those packers who still have prunes to sell want the price to rise; those who have sold "short" expecting to buy later to fill their orders are likely to have to offer better prices.

This is largely due to the clean-up of stocks in the East which precedes the delivery of the 1914 crop as it did in 1910. The interior American markets are buying all the time and one packer recently shipped $30,000 worth to Europe. But the U. S. and Canadian markets can take care of all this year's crop at good prices, even though Europe buys none at all.

But with apricots, we need Europe to consume a large part of the crop, although one packer is shipping a few hundred boxes per carload of assorted fruit for American cities. Apricots have been cleaned up for every year of the past four or five, this year's hold up being due to the war. Of course consumption might be increased if we could get apricots into German markets where they have always been freely bought, but the chances are that they, as well as other warring nations, will not have buying power after the war for high priced fruit. Perhaps here is a hope for dried peach men.

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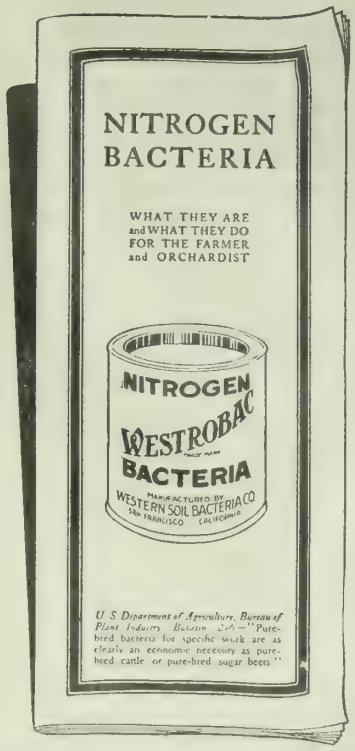

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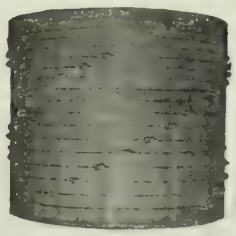

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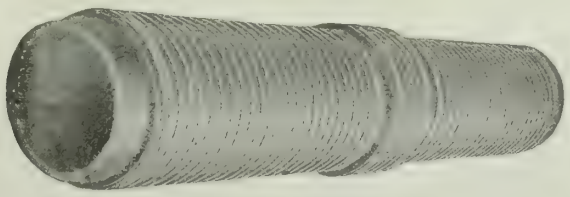

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SANTA CLARA APRICOT PRUNING

(Continued from page 273.)

Besides reducing evaporation in non-irrigated orchards, the fall pruning, as pointed out by R. F. Black, saves the packing of soil by tramping it when wet and by hauling out the prunings. He notes that where the trucks have run when the ground was wet, a plow next spring will either jump over the track or jerk the horses and turn up a big clod. Moreover, though there is a loss of nourishment by early removal of green leaves, he has noticed that the early pruned trees stay green later and so make up this loss, besides using the energy more profitably for the grower.

It isn't so much trouble to prune an apricot tree if it has been trained in the way it should go. If it hasn't, each tree is a problem which may be solved by working toward the standard build of the apricot tree.

In H. E. Losse's 140-acre apricot orchard on the level floor of the valley the trees were cut back to 15 or 18 inches when set out some ten or twelve years ago. Three or four main limbs were allowed to grow so as to balance the tree and were cut back to about three feet at the end of the season. About each cut end, several new "leaders" grew out and at the end of the season all but one of these were cut out; and it was cut back a little shorter than the length on which it grew. Only one new leader is left on each limb, because too many would shade and stunt buds inside the tree.

In selecting which of many leaders to save, the upright growers are preferred, for the weight of fruit will make them bend over to spread the tree enough. But if there is a space beside that upright leader, and another limb grows close to its other side, the upright one is cut back to the old wood and the one projecting into the space is reserved. Every effort is made to leave no large openings to the center of the tree; but to fill them thinly with fruit bearing wood. Each leader that is left is cut back according to the vigor of the tree. After a dry year, or a heavy crop, it would be cut back shorter, as it is on old trees, so that this year of rainfall a plenty, only 3 or 4 inches are left on the 12-year trees. Mr. Williams left 8 or 10 inches.

These stubs of new wood may bloom but are not likely to set fruit that will mature. Their principal business is to put forth new spurs next year which will fruit the year following. Only enough opportunity for new spurs should be left so all that come may be vigorous enough to support the fruit that sets on them. New growth is left long on young trees in order to get a large surface for fruit bearing as soon as possible. Winter pruning might be all right for these since the object is wood growth.

The top of the tree is shaped into a hemisphere to expose a large surface to the direct sunlight, and not so thick but that sunlight may filter to the interior quite freely. If the interior is shaded too much, all fruit wood there will die. Wherever a branch is cut off at its junction with another, no stub is left, because that would rot and not heal over, and because it would sucker until the tree would be full of useless wood.

The hemispherical top of the tree is supported high enough to be out of the way of the horses in cultivating. This is modified in the foothills where cultivation proceeds on contour lines and does not run up and down the hill, partly because it is too hard on the horses and partly because it would tend to make washing away of dirt worse in winter rains.

Branches on the side of the tree toward the hill may be left quite low to the ground because the horse must keep at a distance as the plow swings down hill all the time. But on the lower side the horses must go as close to the tree as possible to get the plow close, and the branches must be forced straight up and not extending far from the trunk. On the other two sides, the new growth is left longer and the trees spread that way more.

Mr. Losse, who has a reputation for being "finicky" about his orchard, hires the pruners by the day or month; never by the tree. Piece work is done in such a hurry that stubs are left and not enough wood is cut out. Branches are cut below the crotch because one cut is easier; though one out of several ought to be left above it. He does not prune the apricots till they are dormant; but the fact that he has been pruning his prunes already seems to show that the delay with apricots is merely a matter of convenience. It is easier to detect the dead wood among the prunes now, which is one reason for their early fall pruning. He has irrigation facilities, so does not need to conserve moisture by reducing leaf surface. Jim Pan says all varieties are pruned practically the same, but Mr. Merrill, who has several blocks of Moorparks, lays special stress on thinning out the fruit buds in order to strengthen the remaining spurs. He has a solid block of 400 Moorparks about 12 years old which averaged 1½ boxes per tree. About 100 of the same variety near the house and not in a solid block averaged three 40-pound lug boxes per tree, one bearing six. But two trees of the same age left unpruned, standing near the 6-box tree didn't bear anything. He thinks the buds need stimulation by concentrating the trees' energy on a small proportion of them. On the 400-tree block there was a heavy setting of buds, nine-tenths of which fell before opening. These trees have too much wood in the centers and will be opened up this fall.

His Blenheims averaged two boxes per tree—not a heavy yield, but tonnage is generally lighter in the hills and the crops more regular. Mr. Merrill makes the point, however, that the hill dried fruit is better because it is all dried for lack of good transportation of fresh fruit. In the lowland, the best is sold to canneries, the rest is dried. And he feels that the lack of irrigation makes some difference in the quality.

He trains the young trees upward from their natural spreading habit by pruning to the upright leaders and by tieing binder twine around the whole top all season until the limbs are set in the upright position.

Mr. Merrill and Mr. Black agree in preferring a tree of four main limbs, no two coming from the same point on the trunk, because the load of fruit which the roots can supply is borne on many limbs.

If only two were left for the head, there would be a crotch and the doubled weight of fruit on each limb would split them off.

Every old pruner advised new pruners to cut lots more wood off than they want to; not to try to save fruit wood; and to regard every tree as an individual requiring individual treatment.

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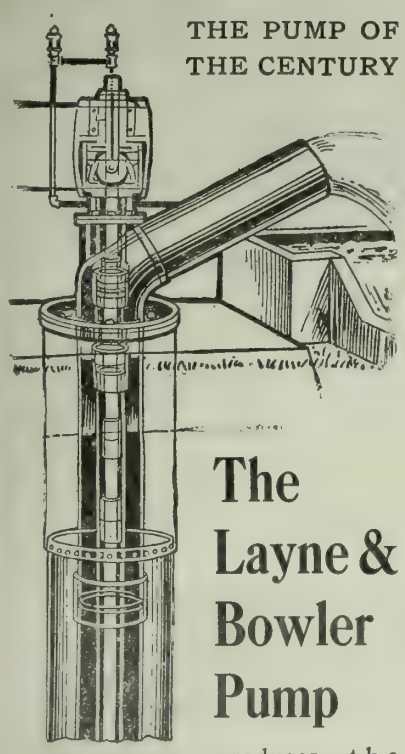

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Co-operation to Right Real Wrongs

To the Editor: How the average man delights in giving a dig at the under dog has been pretty well illustrated in the 8-hour discussions. One would think after reading some of these articles that the only mission that the laborer filled in the world was in making things just as cussed for his employer as possible. If the workingman in any walk of life is not what he should be, his employer is responsible. Such men as Gov. West of Oregon and the warden of the state penitentiary in Colorado and others have proved that it is possible to take the very vilest of criminals and make good men out of them.

Since the hopyard riots of a year ago the State has been investigating conditions under which the common laborer has to work, and has, in the majority of cases, found things in a deplorable condition: unsanitary, filthy, crowded, no privacy, poor food, etc. We need not expect much of a man working under such conditions. The common impression among men that have never done common labor is that any man that has any snap can get away from such a life, which is true in the majority of cases, but all men do not have that snap, and it's a good thing that they haven't, else there would be no one to do our rough work.

Before we have a better class of labor the employer will have to give some thought to the labor problem. In the case of the big rancher who has a superintendent he will have to look after his men personally. I know of two large ranches that are run by superintendents. At one place the employer never speaks to the workmen. Although there is plenty of good food, the men and the cooks are continually at outs. The men are allowed to use the vilest of language in the dining room. In speaking of the Chinaman they use the work "Chink"; this roils the Chinaman and he gets even with them by bad cooking, and the men are continually leaving.

On the other ranch the employer looks after his men personally. Over the dining room door are the words: "Dining room for gentlemen." On the walls are good motto cards. No profanity is allowed and no smoking. If you want the cook to respect you, respect the cook. One man had charge of the dining room.

On one occasion I picked hops along the Sacramento. It was a dry season and there was abundance of help of all kinds. There was absolutely no provision made for the comfort or convenience of the pickers—not even drinking water. There were men, women and children, good bad and indifferent, working together and no provision made for privacy. I tried to better conditions for the women and children but could not find anyone that claimed to be responsible. Jim would refer me to Bill; Bill would refer me to "the old man," who was not in the field just then. This is an old trick, probably dates from the beginning of time. I suppose that the employer's point of view was that this is a free country and not Russia; if you don't like the conditions, why, go somewhere else, where they are to your own liking; there's nobody holding you.

It is a strange thing that the rancher who has thousands of parasites preying upon himself, wife and family should single out this poor wretch for attack. He has a weapon always at hand, if he cared to use it, that can deliver a death blow to all of them, but he does not use it. The name of that weapon is co-operation. Our government sent a committee last year to Europe to all the countries noted for their success in co-operation. Our government stands ready to help us at any time. If we have any doubts whether these parasites will stay dead after killing, we have but to look up the history of the Danish farmer for the past 40 years; it's a marvelous story.

To put in every-day, understandable language the reason why the California rancher has such poor labor; why his land is worn out; why his wife puts in a life of pitiful scheming to make ends meet; why she lives on smelly flank of beef and liver (hog liver at that, mostly) while the parasites that are preying upon the rancher get the balance of the carcass; why his children have a contempt for him and leave home at the first opportunity—all this is because he is a cowardly fool, pure and simple. Nothing else will explain it. Good men and brainy, in all neighborhoods, have attempted, time and time again, to pick this poor boob up, get him on his feet; their reward has been, in almost every case, a slap in the face.

Under present conditions 50 per cent of the rancher's time is wasted in what he calls "business." Rightly organized, all business would be taken off his shoulders and done by men in his employ who have forgotten more about business than the rancher ever knew. Millions of people in our country are doing without fruit today, for the simple reason that it is handled by so many middlemen that it is out of their reach.

My wife, son and I have a poultry ranch. We have never succeeded so far in realizing any profit from broilers or fryers: the time to find a market, the loss from not selling at just the right time, more than eats up the profits. From this time on we shall destroy all young males just as soon as we can tell their sex. In the buying of feeds it is a constant planning how to get around the parasites. Only by co-operation can we ever hope to do this.

The Danish farmer not only believes in co-operation for his own people but for the farmers of the whole world. The Dane believes that we should know what is being planted by the balance of the world in order to avoid the present hideous waste that we see all the time. One year we imported potatoes from Europe, next year we planted so many that in many cases they were not gathered. Up in Oregon they have gone ahead and planted apples; today the railroads tell them no matter what kind of a market they work up the railroads cannot handle half of them. Just think of it, planting trees without thinking of the transportation problem!

I believe that co-operation can be brought about by the young women of California. I say young, for I have very little faith but much sympathy for the woman past 35 for this work who has spent her life on a California ranch. One can readily see this by the letters from the two women. The only outlet with one was the Jap. The other sighs for the good old days when men and women on farms were slaves pure and simple. If the young women will keep everlastingly at it they can bring this co-operative movement about. The women have much at stake. The government tells us that 39 per cent of us are unmarried. The rancher is largely responsible for this; with his present way of managing he cannot afford to pay a living wage, and a man that works for the farmer has no right to marry.

Napa. CHAS. BLOM.

(This is a very suggestive letter, but it does not present a mite of reason why a farmer should vote for the 8-hour law, for arbitrarily reducing the day, reducing the pay and raising the cost of living are all directly opposed to the ends which Mr. Blom desires to attain. Farmers are now co-operating in California as they have never co-operated before and their object is to defeat the 8-hour amendment. It is to be hoped that thus realizing their force by co-operation they may employ this force to secure some other good and essential things, suggested by Mr. Blom. The adoption of the 8-hour law as now presented would make worse every bad thing which Mr. Bloom deplores.—Editor.

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Agricultural Review

STATE FAIR STARTS.

"A great big four bits' worth of educational entertainment," was the way an intelligent farmer described the 61st California State Fair, which, as this is written, is all primed and ready for the big crowds which are expected this week at Sacramento.

To those who have been yearly attendants at this Fair, it is very clear that through the aid of generous exhibits by everyone at all interested in California's agriculture, the directors of the State Board of Agriculture have been enabled to boast of another "bigger and better Fair." Taken as a whole, perhaps the most noticeable advance in the fair, year after year, is the growing importance of the livestock exhibits, and from the scattered, though still crowded, condition of things in these divisions it is very evident that additional room as well as better arranged and constructed buildings must in some way be obtained, and that too, at once, for it is not only provoking to the breeders who show but to the visitor in search of his favorite breed as well. If the proposed bond issue is the cure for this condition it should carry unanimously.

The breeders of purebred stock who take their expensive animals, through the heat, to Sacramento and aid so materially in making the show, certainly deserve better treatment; particularly the dairy cow and draft horse breeders. It is to be hoped that when the next State Fair is held, better facilities wil be furnished.

Machinery.—In the agriucultural and dairy machinery lines, the manufacturers have done themselves proud by having on display the most modern patterns of farm machinery; and the growth of these departments clearly indicates that the farm attendance at these fairs is yearly growing to larger proportions. The tractor division has been changed from its former location, and while commodious quarters have been given for demonstration work, a number of vistors were heard to complain of being unable to find the tractor exhibits.

The display of pumps and pumping machinery alone seems to have suffered a set-back in this year's machinery exhibits, probably due to a large extent to the plentiful rains of last winter. The absence of these exhibitors is most noticeable, particularly on account of the great interest being taken in present day water development.

In the agricultural building and annex the various county commercial organizations have again taken advantage of their opportunities in interesting prospective settlers, through their displays of field crops and fruits, and thus one finds that the agricultural interests have full representation even though, as above mentioned, under trying circumstances in some cases.

On October 1 will commence the big ten-day California Apple Show in San Francisco. It is hoped to have 2,000,000 California-grown apples of 200 varieties. The 21 commercial-apple-growing counties will take part, even Inyo county proposing to exhibit her ability to grow apples. Six hundred points out of 1,000 perfect score will be allowed for perfect fruit; 200 points for perfect pack (40 for bulge, 40 for alignment, 40 for height at ends, 40 for compactness, 40 for attractiveness), 100 for uniform size, and 100 for color. Judges will be Geo. E. Rowe of Grand Rapids, Mich., J. D. Olwell, Medford, Ore., and Prof. C. I. Lewis of the Oregon Agricultural College. Every wormy apple found will lose 40 points for its exhibit.

The Menlo Park Horticultural Society is to hold its annual show Oct. 23, 24 and 25. There are classes for decorative plants, chrysanthemums, for amateurs, commercial growers, and free-for-all, dahlias, roses, carnations, begonias, herbaceous and annual flowers, bouquets, miniature flower gardens, fruit, and vegetables. The net biennial session of the American Pomological Society will be held in Berkeley Sept. 1, 2 and 3, 1915. Other horticultural societies will meet here about the same time. The Pomological Society is trying to estabilsh a national score card for competitive fruit displays, a standard system of naming fruits, a permanent headquarters building, uniform national horticultural legislation, etc., and papers on many other subjects will be read.

The following request comes from the International Farm Women's Press Association: Will you try to have your Farmers' Club send a delegate to the next meeting of The Congress of Farm Women to be held in Wichita, Kans., Oct, 12-15? Home Sanitation, Hygiene, Better Schools, Cooking, Good Roads and various subjects bearing upon rural home life will be discussed by notable men and women.

Ventura county is taking the refreshing method of obtaining exhibits for her county fair to be held Sept. 28, 29, and 30, of sending a man to visit possible exhibitors in all parts of the county. It is also refreshing to read that at one meeting some 20 directors of the Fair Association were present. Merchants and manufacturers are contributing merchandise prizes, including red-topped boots for the visitor with the biggest feet.

Imperial County Fair will be held Nov. 18-21. Five silver cups have been offered as special prizes. Livestock will be featured.

Potato troubles will be discussed by specialists, Sept. 25 and 26. This is the meeting that was postponed twice so noted national and foreign speakers could attend.

Soils, their cultivation, fertilization, conditions, and possibilities will be emphasized at the 45th State Fruit Growers' Convention to be held at Los Angeles Nov. 9 to 14. Miss Lillian D. Clark of the University has been encouraging Farmer Women's Clubs in many parts of the State and directing their original investigations into ways of improving farm home

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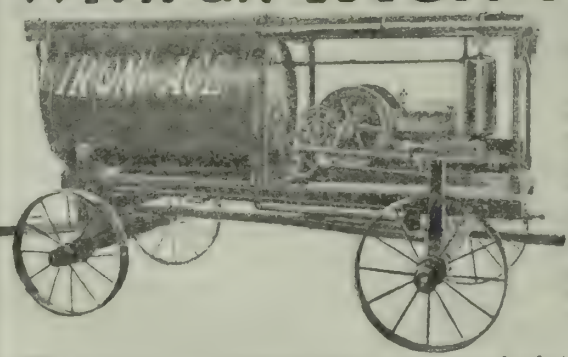

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conditions. These club women will have a very real part in this convention as they showed their capability at the one recently held at Davis. Preliminary organization of a State Fruit Growers' Association will be accomplished, to co-ordinate the many loose locals now in existence and present a solid front to all fruit growers' problems. The 9th International Dry Farming Exposition will be held Oct. 7 to 17 at Wichita, Kans. Exhibits of three classes will compete: one for products grown where the rainfall in 23 inches or less annually, one where rainfall exceeds 23 inches, and one for products grown under irrigation.

Late in August, Imperial valley cotton growers were feeling good because of federal assurances that they could borrow money secured by cotton warehouse receipts. This was very urgent, for Europe, which usually takes more of our cotton than we ourselves use, had stopped her importations and cotton couldn't be sold. The relief was to be provided through the national banks under direction of Secretary McAdoo. But that relief was slow coming is indicated by an open letter from C. S. Barrett, national president of the Farmers' Union. In it he says: "Probably 50 per cent of the cotton crop will be unsalable during the present cotton season at any price whatsoever; and this will mean that the other half will be sold at a price far below the cost of production." As a solution, he advocates that all cotton belt farmers write their members in Congress to push the bill introduced by Henry of Texas. He wants the government to buy cotton at a living price for the grower, and hold it until ragged nations must have it. He points out that such a time will surely come, for there is no practical cotton substitute.

A pear blight convention was held in Sacramento this week at which the vigorous measures of the River pear men were reviewed and means of further general control discussed.

Hughson cantaloupe and melon growers did a neat marketing coup when they sent a man to deal directly with San Francisco retailers. The crop which they couldn't sell at all to jobbers has been sold at much higher prices than the jobbers would have paid anyway, even if they had wanted the melons.

Some time ago we had an article about the Ukiah Farmers' Club which buys all kinds of supplies at wholesale and conducts a co-operative store. The Visalia Co-operative Poultrymen's Association is now branching out along the same lines and will handle groceries. Poultry raising has been stimulated by the association because it reduces cost of production and provides a stable market.

The 10,000 ton co-operative dried fruit shipment to Europe proposed some time ago by Fresnans died there temporarily, but echoes of the idea made themselves heard in the Sacramento and Santa Clara valleys. The campaign at Fresno is now being vigorously pushed for the sake of the markets such a shipment might open. Growers are urged to write to the Fresno Chamber of Commerce whether they will consign part of their crops in such a cargo.

Kings county prune crop beats the state for yield per acre this year. Most everyone is reporting big crops.

Co-operation of the California Cured Fruit Exchange and the Farmer's Union enables the Kerman district to pack at the latter's Dinuba packing house and sell through the Exchange. This seems to be along the right line.

The co-operative canneries at Porterville and Tulare are unable to fill orders this year though they have been canning freestones. The promoter of these is now atempting to organize one at Dinuba, both to help take care of the orders and to provide profitable disposition of the freestones instead of drying them next year. Of course this is a progressive movement worthy of support, but it will be well for the canned fruit market if the canned freestone output is so labeled that the consumer may know what he is buying.

At the Oroville Orange and Olive Exposition to be held this winter, extension of irrigated area by pumping will be emphasized.

Tulare county citrus exhibits for the Panama-Pacific and San Diego Expositions are to be bought outright by a committee of citrus experts already appointed. No doubt about getting the best by this method. The crop in that section is so far along that efforts are already being made to prevent shipment of immature fruit.

From all citrus districts except Tulare county come reports of bumper crops, which need not scare us for prices because the Fruit Growers' Exchange has been making extra arrangements this summer to increase consumption and keep up the prices.

A $50,000 precooling plant is to be built for oranges and lemons by the La Verne Orange Growers' Association of Los Angeles county.

POULTRY NEWS.

At the annual meeting of the San Francisco Poultry, Pigeon and Pet Stock Association, held on the evening of September 10, Dr. F. W. D'Evelyn was elected president, and Edward J. Talbott secretary. This association has a membership of about 150; and at the meeting a great deal of enthusiasm was manifested, which will be reflected in the annual poultry show to be held at the Auditorium in this city Dec. 8 to 13, inclusive.

A meeting of the executive committee was held last Monday evening, at which George Lohr was selected as salesmanager for the coming poultry show. He will conduct a free sales bureau for exhibitors, a new departure for the Association which will be fully appreciated by poultrymen. Another new feature will be a publicity agent. Paul Parker, a well known writer, was engaged to prepare the announcements for the coming show, which means that there is a special effort to make the coming event of greater prominence than any other to be held in the West this season.

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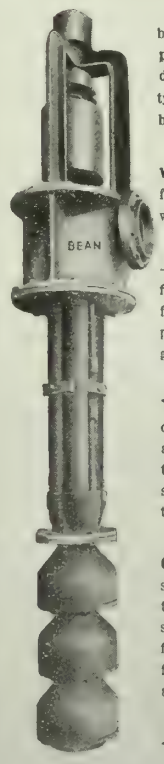
Bean Turbine Pump

For Deep Well Work



INSTALL a Bean Turbine Pump and your water problem is solved. It does the work when other types of pumps would be useless.

AUTOMATICALLY WATER BALANCED, a feature every pump owner will appreciate.

PLENTY OF BEARINGS—they are placed every five feet. This insures perfect alignment and makes possible highest speed and greatest efficiency.

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Bean Spray Pump Company

WEST JULIAN ST., SAN JOSE, CAL.

The Steadily Growing Fresno District Fair

[Written for the PACIFIC RURAL PRESS.]

"We have found that out of ten people attending a Fair, nine of them go for entertainment and the other one goes for instruction and education. We endeavor to keep the agricultural purpose of the Fair on an equal plane with the free attractions; but to draw the crowds, we must have a large program of free attractions," says C. G. Eberhart, secretary and manager of the Fresno District Fair, which is to be held at Fresno Sept. 29 to Oct. 3 inclusive.

A real agricultural fair should be composed of exhibits, on which the principal emphasis is placed—otherwise it should be called a carnival. But to get exhibits, premiums must be offered and accommodations provided. To raise the money for these, there are three principal sources: entry fees, gate receipts and the sale of concessions.

Since gate receipts are the main reliance, and since practically no local fair pays its own expenses, their directors are compelled to devise ways of attracting more visitors for larger gate receipts. Hence the emphasis the Fresno fair is placing on its amusement features.

Horse Races.—Time honored and inevitable among these are the horse races, for which Fresno is noted. New bleachers this year will seat 3500 additional people free; and increased grandstand capacity will seat 2500 more. Tuesday, Wednesday and Thursday will see the harness and running races. Seven Fresno horsewomen will drive; the decisive heat being on Thursday. From 11 to 28 entries will compete in each of the regular races.

Entries in the horse shows in the afternoons of Tuesday, Wednesday and Thursday will compete for 1st, 2nd, and 3rd prizes in each of 14 lots of saddle horses, and for 1st and 2nd prizes in three lots of harness horses. All the different gaits will be shown.

Other Races.—Auto races will be hotly contested for prizes doubled over those of last year, and amounting to over $4,000. The transcontinental balloon race, supposed to be the precursor of regular traffic in the easterly winds two miles above earth, will include ten balloons to start on Friday. The aeronauts will take food for two weeks for two men per balloon, and will also take carrier pigeons to be liberated as the balloons proceed. A school girl aviator will give exhibitions on Tuesday and Wednesday.

Chariot races will be run under searchlights on four of the evenings. Motor polo is scheduled for the first three days and there will be motor cycle races on one day.

The dog show will feature the Airedales and German sheepdogs such as are performing war service now in Europe as messengers. Many other breeds will compete.

Wednesday night a fireworks representation of the taking of Vera Cruz will be seen; and Friday night an eruption of Mt. Lassen.

Tilton's band of 26 pieces will make the air tingle afternoon and night all week, and there will be various other music, vocal and instrumental.

Free-For-All Dancing.—A feature that will attract many people and be objectionable to a large number is the free-for-all modern supervised dancing that will occur nightly. But a redeeming feature is that no intoxicating liquors, gambling or pool selling will be allowed on the grounds. With the grand effort that is made to attract woman exhibitors and visitors, the most refined should be allowed to attend without offense.

Friday will be "All Schools' Day," on which all schools are expected to close so the students and children and faculties may be entertained by the "best annual athletic meet held west of the Mississippi River. Several world's champion participants. Seventeen events."

The Agricultural Object.—But to get to the real business of the Fair. It is the horticultural interest that has built up Fresno county most; and while the Fair includes all counties of the San Joaquin valley which desire to participate, it is from Fresno county that most of the exhibits and visitors will come.

Horticulture.—This year the agricultural and horticultural premiums have been increased more than any others, and a modern one-story fireproof brick horticultural building on concrete foundations 100x150 feet is being built as the first of a group of four such which it is hoped will be built at the rate of one a year, all in front of the Main Pavilion. Agricultural Hall, back of the Main Pavilion, is about 40x100 feet with broad eaves ten feet from the ground and a three-foot screen directly under their full length for ventilation. The regular premiums for fruits and nuts will be apportioned in 234 prizes, all but eight of which will go to growers in sums of 50 cents to $10, including seventeen subscriptions to agricultural papers. Judging commences Wednesday.

If all the premiums are competed for, he who goes to learn the best characteristics of different varieties by comparison of one with the rest in the handiest convenience, may see four varieties of raisins together, six varieties of citrus fruits, eleven of apples, twelve of fresh plums, sixteen of peaches, five of pears, twenty-eight of fresh grapes, besides persimmons, pomegranates, quinces, apricots, prunes, olives, walnuts, butternuts, pecans, almonds, and peanuts.

Grains.—If interested in new and old varieties of grains, prizes are offered for five varieties of wheat, four of barley, three of corn, besides oats, rye, Egyptian corn, Jerusalem corn, alfalfa seed, buckwheat, and California grown rice. Twenty varieties of vegetables will draw forty prizes aggregating $67.

Community Exhibits.—Five special prizes of $300 down to $50 are offered "to any town, district, agricultural club or women's club in the San Joaquin valley" for exhibits "to include all agricultural and horticultural products exclusive of dairy products" and processed fruit and vegetables; but including home canned fruits and jellies. In judging these community exhibits, 25 per cent will be allowed for quality, 20 per cent for variety, 25 per cent for artistic arrangement of products and decoration, 20 per cent for educational value, and 10 per cent for originality. Boys' agricultural clubs, fostered by the University in Clovis and Dinuba and probably Hanford, will compete in this, while Chambers of Commerce and women's clubs of Fowler, Selma, Kingsburg, Reedley, Sanger, Kerman, Madera, Caruthers, and probably Tulare and Porterville are in the race. Their exhibits will be housed in the new horticultural building with the Floral and Nursery show.

Floral Department.—Special efforts have been made to please the lovers of our flowers, and in this department exhibits are promised from the coast and Los Angeles, as well as from Fresno county. One lot, competing for a $20 first prize, is the covering of 200 square feet of space for each exhibit, with greenhouse cut flowers, decorative plants, etc. Palms, ferns, bulbs, cactus and all flowers may be entered until Sept. 28, except entries for table decorations, which close Sept. 25. Ten varieties of roses may compete separately or in groups. Carnations, chrysanthemums, gladioli, orchids, lilies, etc., etc., will decorate this department and there are 28 prizes of $10 down to $2 for cut flowers exhibited by amateurs only. A cold storage plant will take care of exhibits from out of town. For the most complete and artistic display of nursery stock, premiums of $25 and $15 are offered. Every exhibit must be correctly labeled so the visitor may learn to know the different varieties in which he is interested. Judging in this department will occur on Tuesday.

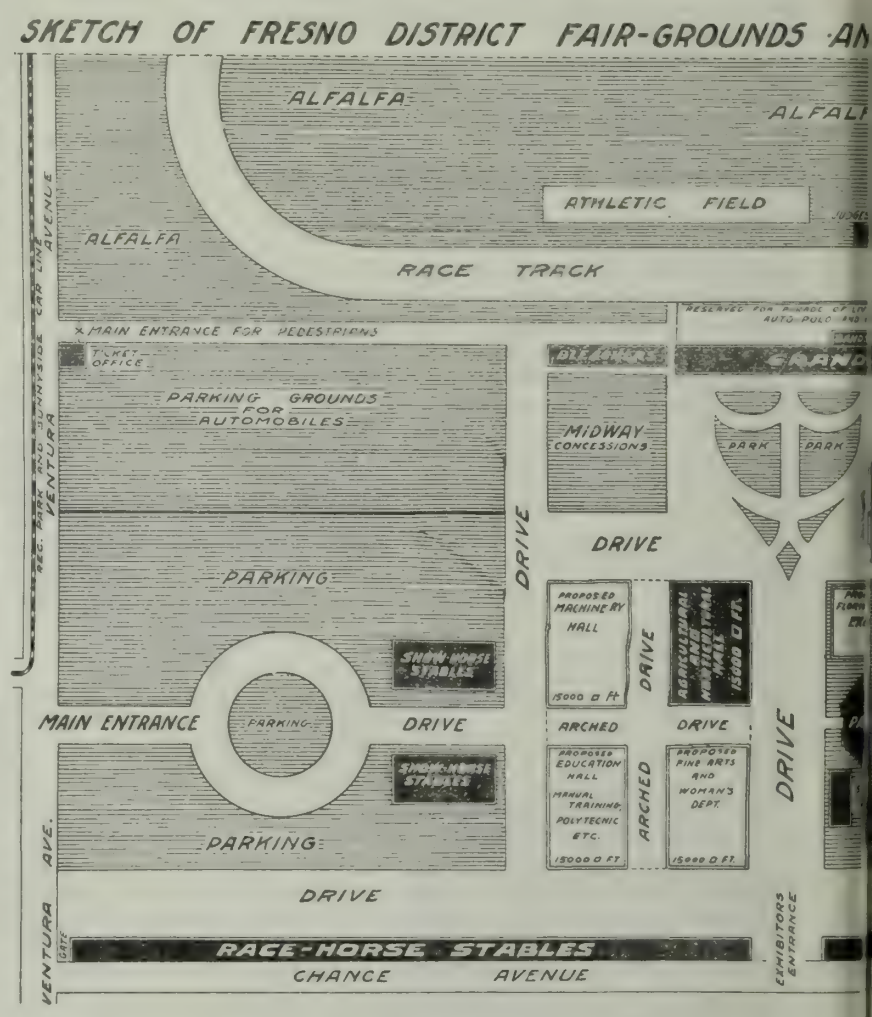
Horticultural Judges.—State Horticultural commissioner, Dr. A. J. Cook, will be one of the judges. He will be assisted by Ernest Braunton, consulting horticulturist of Los Angeles. These men being from outside the district and well known throughout the State, are likely to avoid all charge of favoritism.

Livestock. — But horticulture doesn't get most of the attention. Livestock buildings are being moved and renovated, new ones built and premiums increased. The entries all close Sept. 27 so we do not know what will be shown this year.

Horses.—Premiums are offered for thoroughbreds, standard breds, roadsters and coach horses to the tune of $652. Clyde, Percheron, Shire, Belgian and Suffolk horses in twelve "lots" each will compete for about $250 for each breed. Two of the lots for each breed are (1) for a stallion with not less than three of his colts and (2) a mare with not less than two of her colts. This feature of course emphasizes horse breeding with good stock, for all the adults in these classes must be purebred and recorded.

Grade Horses.—And there are seventeen chances for premiums totaling $176.50 for farm horses not entitled to registry.

The musical class of jacks, jennets, and mules includes five lots of each for which the prizes aggregate $331.50. The first prize winners in all these classes are entered free in their respective sweepstakes lots for



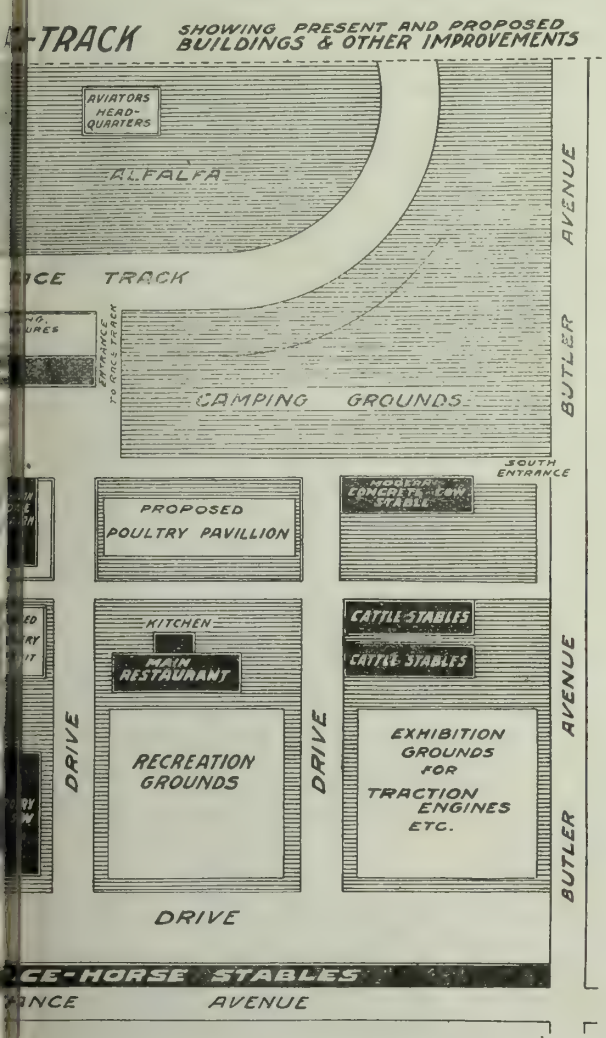
$30 additional prizes each.

Besides this, $95 are offered for families of three or more colts from one stallion, jack, mare or jennet.

Cattle premiums have been almost doubled this year over last, each breed having over $200.

In beef cattle, there are four lots each for bulls and cows of the Shorthorns, Herefords, Devons, Angus, and Red Polls. For each breed there are three herd lots each including one bull and three females, and two groups, one of which is four animals, the get of one sire, while the other is two animals, the offspring of one cow. For each breed too, the first prize winning bulls and cows are entered for the championship prize of $15.

The same classification applies to Holsteins, Jerseys, Guernseys, Ayrshires, Dutch Belted, and Brown Swiss. A free-for-all milking contest open to all breeds and localities will be conducted for five days. Herd lots of three cows each will receive four prizes totaling $300 while single cows will compete for $125.



For swine there are nine classes including Berkshires, Poland Chinas, Durocs, O. I. C.s, Essex, Yorkshires, Hampshires, Mulefoots, and Tamworths. Each class includes 11 lots of boars, sows, pigs, and herds whose prizes vary from $8 to $1.50. Sweepstakes prizes of $7.50 are allowed for the best boars and sows of any age or breed.

Sheep receive only a little less attention, having classes of seven lots each for Spanish and French Merinos, Southdowns, Shropshires, Persians, Leistershires and Cotswolds. Sweepstakes of $7.50 are offered here, too, for the best bucks and ewes of any age or breed. Stock judging begins Wednesday and stock parades will be held Wednesday and Thursday.

Poultry, as usual, receives much attention, the judges being J. D. Yates, J. H. Crow, R. J. Venn, R. L. Leitch, and S. O. Lindgren. The official winter show of the Poultry Association is to be abandoned to throw all its energy to this one. Entries close Sept. 19. The Fair Association furnishes coops, feed, water, and an attendant. First, second and third premiums will be paid for cocks, hens, cockerels, pullets, and breeding pens of one male and four females. Special prizes are offered (1) $10 for the best display in the show, (2) $10 for the best pens in the American, the Mediterranean, the English, and the Bantam classes, five pens to fill the classes. Five dollars will be paid for the best male and the best female in each of three classes except the Bantam, where this prize is for the best display.

Regular premiums are offered for 19 breeds in the American class, eight Asiatics, 15 Mediterraneans, seven English, seven Polish, six Dutch, three French, 23 games and bantams, and 20 ornamental breeds.

Six breeds of turkeys may compete for 1st, 2nd, and 3rd prizes in each of four lots; a pair of ducks may win one of three prizes offered for each of nine breeds and a pair of geese may win of three prizes offered for each of seven breeds.

Pigeons of 29 classes will receive regular and special prizes; nine classes will receive reg- classes are provided for rabbits.

Bees and honey will compete for 44 premiums.

Minerals.—Oils, minerals and their ores, and California dressed marbles and granite have a long list of premiums.

Farm Machinery and Autos. — Every farmer wants to know what sort of machinery and what makes are best suited to his conditions. Only a silver cup is offered for the largest and best exhibit of farm implements, and diplomas for individual machines, but the advertising value of such an opportunity will cause leading machinery men of California to display here and to keep men in charge to explain and demonstrate the workings. Similar trophies and advertising opportunities will bring a comprehensive varied display of automobiles. The traction exhibit will include not less than 30 machines, being three times as large as last year.

Parcels Post.—How to market goods by parcels post will be demonstrated by the Post Office department. This help toward "eliminating the middleman" should prove of interest to all producers. A surprising instance of its utility has recently been shown in the shipment this way of 50-pound sacks of flour by both Chico and San Francisco dealers as a commercial proposition.

Women's Departments.—Of a different nature are the departments devoted to the women and home arts. Most of these are located upstairs in the Main Pavilion.

Baby Show.—Chief of interest among these as shown by the earliness of entries, is the baby show in which over 300 entries are expected. More than that number could not be desired at once, for obvious reasons. The Woman's Home Companion standards will be used in judging these future citizens and only the children of California residents may be entered. This restriction is not for fear of eastern competition but only to reserve space for perhaps less important details. Entries close Sept. 23 at noon. No entry fee is charged, but prize-winning infants must be exhibited all together for presentation of the prizes and popular confirmation of the judges' opinions. Judging of ten classes, including boys, girls, and twins, and two sweepstakes classes, will precede the awarding of a certificate of championship to the best baby in the show. Fearless, athletic, able judges will be provided.

Cooking and Sewing.—Next in interest is probably the culinary efforts of the women, comprising displays of canned, crystallized, preserved, and pickled fruits and vegetables, besides marmalades, jellies, chowchow, and catsup.

Five kinds of bread, eleven kinds of cakes and doughnuts, and four or five kinds of pies will tempt the judges to award premiums of 50c to $3. Special premiums are offered by glass jar manufacturers, too.

Women will be interested in embroidery of cotton and silk goods for which 44 prizes are offered. Lace and drawn work will compete for 34 prizes. Needlework on pillows, bedspreads, quilts, etc., besides samples of the various stitches and schemes of fancy work, finish the list for which premiums are offered. One woman expects to exhibit $1000 worth of imported fancy work.

Lot No. 72 in this department is an infant's outfit for which $5 and $2.50 are offered as prizes.

School Exhibits.—Babies do not receive all the attention, either, for the educational department, open to all sections of the State, offers prizes for grade school work in handwriting, map and picture making, and cardboard construction. High School art work and collections of insects, flowers, minerals, seeds of weeds and crops receive prizes of $2 and $1 in 18 lots. Manual training for school children of all ages, cow testing contests, root growing contests, stock judging contests, sewing and cooking contests are open to school pupils only for liberal premiums.

Historical relics.—One of the most interesting features of the Fresno District Fair this year will be the exhibit of historical relics, heirlooms, antiquities, etc. Mrs. Geo. Taylor is co-operating with Secretary Eberhart to secure the largest possible number of interesting articles that have some connection with the development, settling, or history of this State, particularly with the San Joaquin valley. This display may be made the nucleus of a museum of historical things to be established in Fresno.

Hand Painted China.—The space devoted to hand painted china is of special interest. The color scheme is cream and brown with special lighting.

Art.—Many collections and single pieces of oil painting, water colors, pastels, and drawings will compete for prizes from $15 down. Tapestries, landscapes painted on velvet, sculpture, wood carving, hammered brass all will add to the art department to make a delightful rest from the more sordid and wearing activities about the grounds.

Credit to Whom Credit is Due.—And now, who is responsible for all of this preparation to show the Valley's agricultural resources, and what is their equipment and success in attracting visitors?

Success.—Attendance has been increased to 50,000 last year; more, it is claimed, than the sum of all other fairs in the valley, and the secretary expects "a daily attendance this year of 10,000 to 20,000 people."

Contributors to Success of the Fair. — The county owned the grounds before the fair association was incorporated Feb. 18, 1907, at which time the grounds were turned over for free use of the association directors, A. B. Evans, John A. Neu, J. E. Dickinson, D. L. Bachant, D. L. Newman, G. W. Beall, W. F. Toomey and C. Allison Telfer, the last named of whom was the first secretary. A fair was held that year and every year since. In 1908, '09, and '10 R. A. Powell was secretary; in 1911, C. G. Eberhart, the present secretary, held that position. In 1912, C. I. Pulliam was secretary, and N. R. Cooper last year. For the first few years the directors had heavy deficits to make up, but county and private appropriations now enable the association to break about even.

While the brunt of preparation rests on the secretaries, credit for success lies with several other agencies, too, including the live, wide-awake, boosting directors.

The county furnished the buildings and grounds. In 1911 an agreement was made by which the county undertook to improve the grounds at the rate of $10,000 to $15,000 a year on condition that any profits which might accrue from the holding of the fair should be turned into a "County Fair Fund" to be used for permanent improvements and future promotion.

Business men contribute several thousand a year and the Chamber of Commerce furnishes offices.

The railroads give special rates from as far north as Sacramento and as far south as Los Angeles. Half rates are charged on all shipments for exhibition if they are not sold.

The local newspapers support the fair loyally as shown by the big book full of clippings already made for this year's exhibition by the secretary; and farm papers are generous with their space because this is one of the very effective ways of improving California agriculture.

Equipment and Accommodations.—The Fresno County Fair Grounds consist of 100 acres between Ventura Ave., Butler, and Chance, about two miles from the courthouse at the

(Continued on page 290.)

With the Livestock Men

Fifty Marin county ranchers owning 4,000 cows recently organized the Pt. Reyes Co-operative Creamery Co. They will build a new plant at Pt. Reyes to be operated by John Sallie. Directors are L. R. and E. J. Filipini, V. J. Bloom, A. F. Berri, J. D. Avilla, D. Albini, and G. Griess, Marshall, Tomales, Pt. Reyes, Olema, Tocoloma, Nicasio, Inverness, and Valley Ford are represented among the stockholders.

Alaskan demand for butter is said to be the cause of a 10-cent increase in price per pound for butter fat at the Oakdale Creamery since Aug. 15.

Newman station dairymen have been receiving nearly $2400 per day for their product.

Rocher Brothers of Delevan recently brought 51 purebred Holsteins from Wisconsin. Wisconsin is famous for her community breeders' associations which make national reputations for their localities for the breeds raised there.

Modesto Jerseymen are going to the State Fair in force with their cattle. Among them are C. D. Hayworth, J. Watson, Guy H. Miller, J. M. Bomberger, C. N. O'Dell, and D. F. Conant.

Frank Guerin of Tulare recently sold a nine-months purebred Holstein bull calf to Wm. Moller of Santa Barbara for $150.

Wesley Richards of Oakdale, who recently resigned irrigation work to take charge of his dairy ranch, begins by shipping in 40 high grade and registered Holsteins from Merced.

H. B. Goccken recently sold a purebred bull and two heifers to Hutton Bros., who are running a certified dairy near Dixon.

V. A. Peterson of Arbuckle sold 17 Holstein heifers under 13 months for $3400. They must have been purebreds, at $200 each.

A Tri-counties Cow Testing Association was recently organized south of Tehachapi by 30 dairymen who signed up 900 cows. An expert cow tester will begin soon to note which cows are being milked for the pleasure of milking. The University of California is ready to advise and aid any community which wants to test its cows, whether purebreds or grades.

Wm. Gabel and Wm. Bach recently sold 96 calves for veal at 8 cents per pound on hoof.

C. N. Ellinwood shipped a car of steers to San Francisco for Wm. Rushing of Cooperstown.

D. M. Stevenson of El Dorado county recently bought a trainload of 600 thin longhorn New Mexican cattle to feed. He has already sold 225 head profitably and has markets promised for the rest.

Jacob Bloch of a New York firm owning several meat markets says that Argentine beef is now all in the hands of American packers. To correct the shortage of beef, he suggests:

"An export duty should be placed on beef; the government lands of the west should be thrown open for grazing; killing of any female calf under 3 or 5 years, or of any calf weighing less than 150 pounds, should be prohibited; 10 per cent of the income tax should be used for fostering the raising of cattle; public slaughter-houses, like those in England, should be established by the government."

Black leg among young fattening calves is prevalent in the Durham and Dayton districts of Butte county according to Dr. W. P. Jackson, county livestock inspector.

Chico shipped to Merced eleven loads of lambs recently driven in from Nevada.

The Norton ranch of 11,000 acres in Shasta county was recently sold to J. Walker of San Francisco. The new owner is reported to intend to make a dairy ranch of it, starting with 30 Roan Durham cows.

SHORTHORN AWARDS AT STATE FAIR.

As formerly stated in these columns, the Shorthorn entries at the State Fair this year were large, and the show herds of the four leading Shorthorn breeders which come before Judge Cain, Monday, Sept. 14, showed that everybody was there with the intention of winning heavily.

The most noticeable achievement of any one breeder after the ribbons were placed, was that of the Hillcrest herd at Davis, and both T. S. Glide, the owner, and Norman Hale, the veteran herdsman, deserve a great deal of credit in the strong aggregation of well fitted stock they assembled.

The following awards were made: Three year or over bulls: 1st, Ringleader, owned by T. B. Gibson; 2nd College Count 3rd, owned by Howard Cattle Co.; bulls two years and under three; 1st Greenwood King, owned by T. S. Glide; Senior yearling bulls; 1st Hillcrest Knight 9th, owned by T. S. Glide; 2nd Fond Lavender, owned by Howard Cattle Co.; Junior yearling bulls; 1st College Count 20th, Howard Cattle Co.; Senior calf bull; 1st Mysie's Knight, T. S. Glide; 2nd Roselawn Choice 81st, T. B. Gibson; 3rd Hopland Peter, Hopland Stock Farm; Junior bull calves; 1st Lancaster King, T. S. Glide; 2nd Winsome Prince, Howard Cattle Co.; 3rd Roselawn Favorite 84, T. B. Gibson: Cows, three years or over; 1st Greenwood Maid, T. B. Gibson; 2nd Bapton Lassie, Howard Cattle Co.; 3rd, Flower Girl 14th, T. S. Glide: Cows, two years and under three; 1st Lady Perfection, T. S. Glide; 2nd, Roselawn Queen 56th, T. B. Gibson; 3rd Winsome Countess, Howard Cattle Co.; Senior yearling cows; 1st Mary Lancaster, T. S. Glide; 2nd Little Missus 7th; 3rd Blossom Countess, Howard Cattle Co.; Junior yearling cows; 1st, Snow Girl's Queen, Hopland Stock Farm; 2nd, Spicy Maid, T. S. Glide; 3rd Elgitha's Queen, Hopland Stock Farm: Senior calves; 1st, September Morn, T. S. Glide: 2nd, Hopland Lass, Hopland Stock Farm; 3rd King's Lassie, T. S. Glide: Junior Calves: 1st Hillcrest Countess, T. S. Glide; 2nd Ramona Miss, Howard Cattle Co.; 3rd Hopland Gay Lass, Hopland Stock Farm; Aged herd, 1st T. S. Glide; 2nd T. B. Gibson; 3rd Howard Cattle Co.; Breeder's young herd; 1st T. S. Glide; 2nd, Hopland Stock Farm; 3rd, Howard Cattle Co.; Calf herd; 1st T. S. Glide; 2nd Howard Cattle Co.; 3rd T. B. Gibson: Group; get of sire, 1st T. S. Glide; 2nd T. B. Gibson; 3rd Howard Cattle Co.; Produce of dam; 1st T. S. Glide; 2nd T. S. Glide: Grand champion bull: Greenwood King, T. S. Glide: Grand champion cow; Lady Perfection, T. S. Glide: Junior champion bull; Mysie's Knight, T. S. Glide; Junior champion cow; September Morn, T. S. Glide. Next week's issue will contain further livestock awards.

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Hanford, October 28, 1914
100 HIGH CLASS ANIMALS 100
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Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

DAIRY CATTLE

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

ROYAL JERSEY HERD—Offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers & Merchants' National Bank.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal. —High-class thorough-bred Holstein bulls for sale. Write for prices and pedigrees.

HAVE FOR SALE 35 head Holstein graded milk cows; will exchange for beef stock. Address H. S. Hopkins, Live Oak, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

THIRTY-FIVE head of good grade dairy cows for sale by Dr. A. Schapp, Esparto, Yolo Co., Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

CREAM CUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Modesto, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS—Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

REG. HOLSTEINS — Bull calves. Julian-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

SWINE

ONE REGISTERED BOAR, 14 months old. Sire Prince Gailliard, head of the Berkshire herd of Hawaiian University College Farm. Price, $50. C. H. Thompson, Novato, Cal.

BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder. "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

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Veterinary Queries and Replies

[Answered by Dr. Robert Boyd, San Francisco Veterinary College.]

Cow with Mammitis.

To the Editor: Will you kindly tell me what to do with my cow? She came fresh August 1, and seems to be all right in health, but one of her hind teats began to give milk that was quite yellow and later it became bloody and thick. Now it gives but very little milk and that is yellow and thick or kind of lumpy. The udder is soft and has no lumps in it that I can feel. I feed only alfalfa hay.—C. T. M., Hughson.

(This is mammitis. Give a physic of epsom salts, one to two pounds, according to the size of the cow, with one ounce of powdered ginger in one quart of warm water. Bathe the udder with warm water and rub in the following liniment twice daily: four ounces each of tincture of arnica, fluid extract belladonna leaves, soap liniment (U. S. P.) and two ounces of alcohol.)

Cure for Blackleg.

To the Editor: What is the cause and cure for blackleg?—W. D., Visalia.

(Blackleg is caused by the invasion of the animal's system by Bacillus Anthracis Emphysematosa. There is no cure for the disease, the only thing to be done being to prevent the disease as much as possible by vaccinating all young cattle. This should be done by a qualified veterinarian if one is at all procurable.)

Tuberculosis or Indigestion.

To the Editor: I have a Holstein cow, three years old, that is emaciated badly, gives only about three quarts of milk to the milking compared with two gallons previously. Her bowels are terribly loose all of the time and she grits her teeth a great deal, also seems a trifle stiff in her hind legs. Will you kindly advise me what you think ails her and a possible treatment?—R. A. T., Patterson.

I would advise you to have this cow tested for tuberculosis if there is a veterinarian in your section. It may, however, be caused from indigestion alone. You could give a quart of linseed oil with two ounces of turpentine in it and follow with tonic recommended to S. L. W., Hughson, below.)

Falling Off of Milk.

To the Editor: I have a cow that up to four days ago gave about two gallons of milk at a milking but at that time she began to fall down to about a pint a milking. She eats regularly but not heartily, and does not appear sick, but rather languished. I have had three of my neighbors look at her and all pronounce it a case of indigestion and all say that she will come up to her milk soon. I am feeding oat hay at night and dry alfalfa the rest of the time. I keep sulphurized salt before the cows all of the time. About three months ago she had a similar attack, but not nearly so severe. Her bowels and urine seem about normal. Have owned her about a year and she has only had two attacks. She has no cough nor any symptoms of anything that I can discover. Can I do anything to prevent another attack?—S. L. W., Hughson.

(Give the cow a saline purge of one to two pounds of epsom salts and one ounce of powdered ginger in a quart of warm water. Keep feed entirely away from her until she commences to purge which should be about 12 hours, and they feed her lightly at first. After the bowels return to normal give the following twice daily for three days: mustard (ground) 6 ounces, powdered ammonia carbonate 6 ounces, powdered nux vomica 1½ ounces, powdered gentian 6 ounces and powdered ginger 6 ounces. Mix and divide into six powders, giving one powder in ½ pound of molasses and 2 pints of ale or beer.)

Bull with Lame Shoulder.

To the Editor: I have a one-year-old bull calf which has gone lame in the shoulder. His shoulder has shrunken away. I would call it sweeney. Can you tell me how to cure it?—M. W. L., Fort Jones.

(The sinking of the shoulder is due to atrophy of the muscle from the animal favoring the limb, and he may be lame in some other part of the leg. I would recommend you to have a veterinarian look at the animal. If you are sure the lameness is in the shoulder, however, you might try the following liniment, rubbed well in once daily: strong ammonia water two ounces, oil of turpentine two ounces, olive oil eight ounces. Mix.)

Caked Udder.

To the Editor: I have a cow with caked udder which I have been able to get out, with the exception of about one quarter of it, which milks a thick substance and I can not help it from the outside. Can you tell me of a cure and also how to fatten a nine-year-old cow which scours on green feed?—D. F. C., Lemoore.

(Try giving the cow a purge of one to two pounds of epsom salts with one ounce of powdered ginger in a quart of warm water and apply to affected quarter the following liniment: fluid extract belladonna leaves two ounces, glycerine 16 ounces, soap liniment (U. S. P.) 24 ounces, and rub into affected quarters twice daily. If this treatment does not produce results it will be necessary to inject a milk antiseptic solution, as a 5 per cent solution of boric acid, into affected quarter and milk out again twice daily.

Would advise you to have the second mentioned cow tested for tuberculosis. There are many rations of a fattening nature besides green feed and a cow requires only sufficient green feed to supply succulence to the ration. No feed, however, will fatten a cow having tuberculosis affecting the intestines.)

Hog with Dry Cough.

To the Editor: I have a pig about nine weeks old which for the past five weeks has had a dry cough. Its appetite is good but the hair is rough. At times seems stiff like it had rheumatism. Will you please tell me the disease and the cure?—C. L. V.

(This apepars to be indigestion. Put some charcoal or wood ash where hog can have access to it and see that the bowels move freely. A little flaxseed meal in the ration will generally make the bowels move freely. You do not mention how the pig is being fed.)

Soaked Apricots for Hogs.

To the Editor: I have been feeding dried apricots, soaked about 12 hours, at the rate of a five-pound lard bucket full of dried fruit to each hog of about 150 pounds weight. For a few days they ate them well and still drink the water they are soaked in, but refuse the fruit. Can you tell me the cause and suggest a remedy?—H. J. M., Oakdale.

(Dried apricots are scarcely a suitable feed for hogs and would suggest that you feed some other ration. The hogs have probably got wise to the feed you have sprung on them and are trying to show you that they do not like them.—Editor.)

Receipts at the Portland union stockyards for the week ending Sept. 11 were: cattle 1593, calves 56, hogs 4401, sheep 4973. There was good demand for cattle, especially steers, best grades going 10 to 15 cents higher than a week ago. Several cars went at $7.10 to $7.25. Hog prices dropped as much while mutton did not supply the demand.

Ask the owner of a colt from a purebred sire how much more that colt cost him and how much more it is worth.

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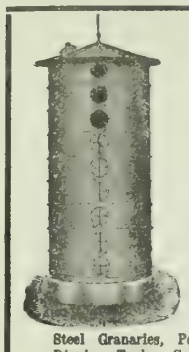
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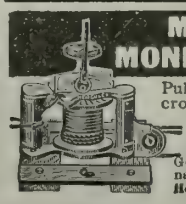
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The Foundation for Better Horses.

[Written for the PACIFIC RURAL PRESS.]

An owner of both a grade and a registered stallion recently remarked that he could make more money out of the grade than he could from the registered animal, giving as the reason, "Farmers will pay me $15 for the service of the grade rather than $20 or $25 for that of the registered animal."

By this he did not mean that he took in more actual money during the season from the grade horse but that he was making more money on his investment, for while the registered animal had cost nearly $2,000 the grade had been raised on his farm and was therefore much cheaper.

In the section where these horses have stood for the past two years the farmers are largely of foreign birth, and a great deal of their farm work is done on hilly lands, which may account for their indifference as to the kind of a stallion they breed their mares to, thinking possibly that the grade cross will get them colts large enough for their own needs.

Without doubt such economy at time of breeding is mighty poor business and yet it is being done in almost every section of the State regardless of nationality or locality. This is shown by the State records, which show a surprisingly large, although now decreasing, number of grade stallions in use in this State at the present time.

Men who have been most successful in the raising of horses in recent years for market purposes have almost invariably found that the only way to secure horses that come up to the market requirements is by using registered stallions.

The few extra dollars charged for the services of a good, sound, registered stallion are more than repaid in the extra price received for the progeny; and many horse buyers make it a point to inquire about the sire of the horse in question before they make any offer for him.

As with all other kinds of stock, the practice of building up horses, through the use of purebred sires, is one that must be persistently followed, as a single out-cross with a scrub sire will undo several years' work of building up.

As the valuation placed upon the horses in this State is greater than that of any other kind of livestock, farmers should take as much care in selecting their sires as they do with other kinds of stock.

A few principles which can be profitably followed by all farmers in the raising of horses are summed up by Dr. A. S. Alexander, of Wisconsin, who is a recognized authority on the breeding of horses. They are as follows: Commence grading up the farm horse stock by mating carefully selected, sound, suitable mares wtih sound, prepotent, muscular, purebred registered stallions.

Continue year after year to use the best obtainable purebred stallions of the character and breed first chosen and never out-cross to any other reed.

Do not use any stallion that is unsound, unsuitable, partially impotent, unlicensed or not registered in a stud book recognized by the Department of Agriculture, Washington, D. C.

Do not breed from any mare that is deformed, sick, diseased, vicious, unsound, unsuitable, a poor milker, or a cross mother.

Do not retain for breeding purposes a colt that is not purebred and eligible to registry in a stud book recognized by the Department of Agriculture.

Encourage the working of purebred stallions enough to keep them healthy, muscular, prepotent and prevent pampering, weakness, partial prepotence, and actual sterility; and so tend to insure vigor, strong constitution and health in their offspring at birth and throughout life.

Organize township and county associations for community breeding of horses of the same blood, character, and quality and to more readily obtain purebred stallions and mares and insure a profitable market for surplus horses.

If the California farmer will follow the above methods to the exclusion of all others, there will be a minus quantity of scrub stallions and a big increase in the efficiency and valuation of the farm horses.

KEEPING THE GOOD COW.

[Written for the PACIFIC RURAL PRESS.]

The pace that is being set by breeders of dairy cattle in the race for supremacy in butter-fat records brings to light many interesting facts that should be of great value to all owners of dairy cows.

In visiting the registered Holstein herd of A. W. Morris and Sons at Woodland, one is always impressed with the wonderful records that are made each year; and is often forced to speculate as to what these animals would have done for their previous owners, and how those owners were induced to dispose of such remarkable animals.

The fact is that a number of the cows which have put this herd high in the Holstein ranks were purchased of leading breeders of the East, who are recognized authorities on the Holstein breed, and yet they were unable to foresee that the animals which they were selling for a nominal figure would some day be worth many thousands of dollars as breeding animals.

For instance, there is one cow in the herd which is now going strong for the world's record milk production for one year's time. This is Tilly Alcartra, a cow which last year finished a yearly test as a junior three-year-old (with her second calf) with 21,421.3 pounds of milk and 841.22 pounds of butter.

This cow was started on official test again November 14 last, since which time she has been averaging a little better than the world's champion, which gave 29,591 pounds of milk in a year.

In appearance this cow is not nearly so typey as others in the herd with only ordinary records, and the average buyer would be unable to judge her worth as a fat producer, unless acquainted with her test records. In fact the man on whose place this animal was born little appreciated her actual worth as a producer; for he sold her for a comparatively low price, in fact not so very much higher than many grades are daily sold for in California today.

Perhaps the average dairy man may say that he has no particular interest in this cow or any other which has broken the world's record; as he is not in the breeding business and cannot therefore hope to secure such high producing animals.

Assuming that such cows are out of the ordinary, there is a lesson to be learned in the story of this cow, and that is, know what kind of a producing animal you are selling before allowing her to go off from your ranch at the ruling price of cows at that time.

In order to gain such information, whether the man be raising grades or purebreds, he should know, through the use of the scales and Babcock tester, whether he is selling a cow that would add materially to his cream check each month, or one on the other hand whose only value is in the amount of beef which the butcher can get from her carcass.

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Securing Prolific Hogs.

[Written for the PACIFIC RURAL PRESS.]

Although there is not, perhaps, any animal that is of interest to more farmers than the hog, statistics show that pork in some form is annually shipped into this State which would amount to between 650,000 and 750,000 live hogs. As that is only a little less than the total estimated number of hogs in this State at the present time, it is evident that the California hog has not yet reached anywhere near the importance that it should, if our farmers are to secure the rewards of increasing home markets and meat prices.

Of course the question of disease is paramount in the raising of more swine; and while cholera alone makes a large total in dollars and cents, there are numerous other causes which oftentimes make the raising of swine less profitable than it should be.

Numbered among the more important of these is lack of prolificacy in the brood sows, as it is a recognized fact that the average litter is far below what it should be, thus making for low efficiency in the sows, and an ultimate lessening of profits to the farmer.

Examples of what may be accomplished where a systematic effort is made to improve the prolificacy of the sows are not so numerous as they should perhaps be in this state; yet those farmers who have paid more attention to this feature of their business state that they have been able materially to cut down on the number of brood sows and still keep the young herd up to the capacity of their ranches.

An instance of this was recently seen on a ranch in Stanislaus county where a dairyman has for several years practiced a system of culling out all sows who persistently farrowed small litters; substituting in their places younger sows, who show ability toward large and uniform litters.

As prolificacy is certainly an inherited character, he does not stop with simply culling out the small-farrowing sows, for while that would cause a saving for a season or two it would not solve the question of how to secure larger litters for all time. He operates his swine herd as he does his dairy herd, viz., for greater future efficiency, and he carries the system still further by marketing all of the pigs farrowed from the less prolific sows.

Thus we found that while he was using only grade sows and breeding them to registered boars, each new brood sow added to the herd was marked for identification and a record kept of her achievements. If through some fault of the owner, such as improper care, the sow does not do well with her first litter, but shows a tendency toward being a good mother and farrowing a goodly number of pigs, she is kept in the herd until such time as she ceases to be satisfactory, either through age or disability. One point which is strictly adhered to, however, is that none of the young gilts from these sows of doubtful prolificacy are kept for breeding purposes, the practice being to select all breeding gilts from those sows having the largest and most uniform litters.

It sometimes happens that the small litters are directly traceable to the boar; and by having a number of proven sows these fellows are soon checked up, with the result that after a good one has been secured, he is kept for service as long as possible. A proven old boar, like a proven sow, is always worth keeping; and, if it becomes necessary on account of weight, a breeding crate is used.

Generally speaking, the two-year-old sows, and even older ones, farrow litters fully 25 per cent greater than yearling sows; and for this reason a good breeder is never sold to the butcher until she becomes incapacitated.

It is commonly admitted in the vicinity of this farmer that his sows farrow far larger litters than the average; and he attributes it entirely to his method of selection.

SILAGE AND ALFALFA FAULTS.

[Written for the PACIFIC RURAL PRESS.]

"I've seen more indigestion in dairy cows since I've been here than I ever saw in the East," says H. N. Woodward of Tehama county. "Hardly a week passes but some one phones that his cow is sick, hair turning the wrong way, bloating a little.

"The cows have impaction of the bowels, due to over-eating of alfalfa hay. Nearly everybody here feeds nothing else. I tell them to give the cow a dose of salts, but several cows have died around here.

"Alfalfa isn't a balanced ration. It supplies protein; but carbohydrates must be supplied by other feed; and for dairy cows, I know of nothing that will balance alfalfa so properly as corn silage. I fed it in Iowa 25 years ago.

"Last winter I handled over 1,000 cows in the Sacramento and San Joaquin valleys, and all but one of the men I dealt with who fed silage spoke of the increased flow on that account.

"But much of the silage in this country is poor stuff, especially in the resaw silos which are not built tight enough to exclude all air from the sides.

"There are two other faults which people are specially prone to fall down on. Silage should be cut finer —into half-inch lengths.

"Sometimes they set the knives right, but pretty soon the knives get dull and just tear the pieces apart in bushy shreds. The tough corn husks especially, often go through whole. Cutting in bigger pieces might be all right if it were heavily tramped, but people don't tramp the silage enough as it goes in. Anyhow when part is fine and part coarse, the husks and coarse pieces go to the far side while the feathery stuff settles straight down."

(To overcome this, it has been suggested to pile the silage around the edges with forks where necessary, and tramp that well, leaving the center to fill as it may, for it will settle properly anyhow.)

"Another trouble is that people silo corn too dry. Nothing takes the place of the natural juices, but if it is too dry, add lots of water—there is very little danger of getting too much if the silo does not leak and waste good juice.

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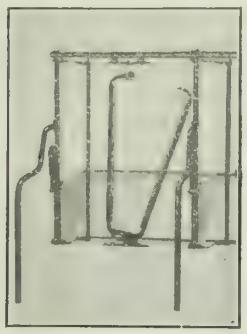
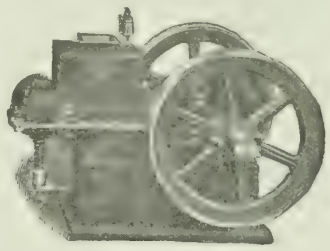

James Stall.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PERCHERONS

Our recent importation arrived at our Oakland stables June 15th and July 7th. The best that France produces. Every horse is sound, stylish and of the best conformation. The Dunhams of Wayne, Illinois, have sold over 200 imported Percherons to California breeders. William McLaughlin, who from 1895 to 1898 had charge of McLaughlin Bros.' stables at Kansas City, Mo., has shipped to California and sold in the State 150 Percheron stallions. As to the liberality of our treatment of customers and the fairness of our contracts, ask any man who has ever bought a stallion of W. S. Dunham or William McLaughlin.

It you want the best, let us hear from you.

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Shire Stallions and Mares, both imported and home bred, of the best breeding, for sale. Inspection invited. For particulars apply.

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3 to 12 Months Old.

Being from A. R. dams, in addition to constitution and quality they have the promise of productiveness to transmit to their offsprings. Sire—Imp. Lord Kitchener several times grand champion at California State Fair. His only daughter tested produced over 550 pounds butterfat as a four-year-old.

"THE BULL IS OVER HALF THE HERD."

See them before buying a bull. Will Show at the State Fair.

Write J. W. HENDERSON
1ST NAT'L BK. BLDG.
BERKELEY, CAL.

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ONE MILE EAST OF
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818 So. Los Angeles St. Los Angeles, Cal.

THE STEADILY GROWING FRESNO DISTRICT FAIR.

(Continued from page 285.)

center of town, and are reached by Recreation Park or Sunnyside cars which during the fair run as frequent cars as possible. There is a fine drive practically all the way out.

Restaurant and concessions will provide refreshments, water is convenient at all points, toilet facilities are excellent, and shade trees surround the buildings. Shade is important here. A boon to mothers with small children is the playground, in charge of two attendants, in which the little ones may be left as long as desired.

The main pavilion is an octagonal building about 100 feet across, the upper floor being set aside for women's exhibits. Large frame supported, canvas covered space will protect additional exhibits and concessions.

Agricultural Hall in the rear is roomy and well ventilated. The poultry shed next to it is also well shaded by broad eaves over ample ventilating screens. It is about 22x75 feet.

Two open-sided stock sheds of about 100 capacity have been moved from their former location near the horse barns to a position among the trees back of the agricultural buildings. A new modern show barn 48 by about 150 feet for 100 head, will be finished close to them before the fair opens.

Directly in front of Main Pavilion is the ground heretofore used by machinery exhibits. Here will be the group of four permanent buildings, one of which, that of Horticulture, with 15,000 feet of floor space, is about ready for exhibits now.

At a little distance to one side of these is the pony shed containing 78 large stalls on both sides of a 15-foot alley. Pet stock will be shown here.

The hog shed, which was to be moved to the site of the cattle barns, contained 16 wovenwire pens 8x8 feet square under roof with others not covered. These are probably fixed comfortable now.

In front of these, and first to greet the visitor as he comes from the Recreation Park side of the grounds, are two roomy horse barns for show stock, each 50x165 feet.

Truly, with the geographical location so convenient to every part of the San Joaquin empire, the ample grounds and county aid for permanent buildings, with the liberal support of business men and farmers, the Fresno District Fair has every opportunity to make an agricultural success.

LETTING THE CALF SUCK.

"I sold a calf for $19.40 at 172 pounds after it had sucked 9 weeks; and I had reserved a gallon a day for family use from that cow. With $19.40 I can buy as much hay as the cow will eat in a year and I get the milk for the rest of that year for the feed that I use to balance the alfalfa. It pays to give a good calf a good send off," said a dairyman recently. That might be alright if he had taught the calf to drink that milk instead of suck it, for he had the trouble of milking anyway.

Poultry for Profit

GOOD CARE DURING THE MOLT.

[Written for the PACIFIC RURAL PRESS, by Susan Swaysgood, Pomona.]

This is one place where a great many poultrymen lose out; just as soon as the hens drop off in production, instead of concluding that the hens have earned a rest and deserve full credit for board, the average man commences to neglect his flock.

This is all wrong because if heavy laying is a strain on the constitution, calling for good feed and care, surely feather making is also a strain.

Now there is not any doubt that if left to themselves and given their liberty, hens will molt in a perfectly natural manner, and in the prescribed time, provided the picking is good; but after they have gained full plumage they will take a rest of several weeks, if not months. The rest is just as natural as the molt, because after such a severe strain as growing several thousand feathers, with no special care or feed, the system has been drained to the utmost of its resources; and death or the rest is a necessity.

Not only that, but the hens have been forced to hustle at a time when they were most disinclined to do so. A molting hen has not the vim and go to her that she had when she was laying eggs and singing—not a bit of it—instead of singing they feel like resting, not only from egg-laying but through the whole system.

Very often the appetite fails and hens don't care much about rustling food, and in this indifferent period it pays to let them rest. Feed just enough to satisfy the demands of nature but let the feed be of the material for making feathers.

This period of rest and loss of appetite is a natural beginning of the molt; it loosens the old feathers; not that they all drop out at once, but they will begin to do so after these first days of semi-starvation.

After this the hens should be made to exercise some and be induced to eat more by a change of food and care. Any mash that has made good as an egg producer will make good during the molt with the addition of ten per cent of pure flaxseed meal. No old process meal is any good because the oil has been taken out and it is the oily substance that is needed for feathers.

If the hens stand ten per cent of flax meal without showing any laxativeness, increase the amount and at the same time add five per cent of fine ground bone, besides what may be in the mash. Sulfur is found in all coverings of animals and birds, so then add one pound of flowers of sulfur to 50 pounds of dry mash. But always watch for results. The hens must not be purged; but the bowels should be kept rather loose for good results. This assists nature to carry away all poisonous matter from the system and opens the pores of the skin so that old feathers can drop easily and new ones push through. But before feathers can push through, there must be the material in the feed to make the feathers. Sunflower seeds in moderation are helpful, but they are hard on the digestive organs so must not be fed too heavily.

Plenty of grit, oyster shell, and even a little iron in some form should be given, as feathers are composed chiefly of mineral. The minerals found in good fresh green feed are the most acceptable to the hens and they do the work by nourishing the body and furnishing feather-making material at the same time.

As the molt progresses the wise poultryman will induce his hens to eat all they will of a large variety of foods. The object is to grow the feathers with the least possible strain on the hens. If he can grow feathers and increase the bodily weight of the hens, then the molt is no particular strain on the system. Cottonseed meal is hard on the digestive organs, besides being constipating, so that if fed at all it must be in small quantities. Soy bean meal in small quantities is good molting food, as are cracklings, fresh ground bone, etc.

In grains, oats stand first except for the fibre, which is tough; but if we sprout the oats then we have an ideal feed for molting hens. At least once a day these should be fed, and more will be better. Soaked barley is also a good feed. Soak the barley over night, then let it drain and commence to sprout, as it will do in a very few hours in warm weather; feed this for breakfast in litter so that the hens begin the day with good circulation. Circulation is the life; it carries the blood to all of the outer skin as well as to the parts that are engaged in feather making, and it nourishes those parts and gives life to the feathers.

Wheat comes next and corn last; the hens like a little corn and it adds to the animal heat, which at this time is a little low, so in moderation it will be helpful.

If among a flock of hens there are a few that are more backward in molting and even then make but a partial molt, it is best to discard them before another season comes. However, some very heavy laying hens that brood chicks will make a partial molt while with the chicks and then the good feed they get induces laying and the molt stops. This kind of hens are too profitable to discard; in fact all of their progeny should be kept, because with care it is possible to get them to finish the molt before leaving the chicks, just cut off some of the stimulating food and turn them out on grass range until through, when a very little feed will start the eggs coming.

With proper care and feed it is possible to get the hens through the molt without there being any real laying off, except for the first few days, and then nature should be let alone.

Instead of neglecting hens at this critical period they should be given extra care and feed, be kept strictly clean, and given all the freedom that is possible, and this includes freedom from the males, who only annoy them and serve no possible good.

In this climate all hens should be in the molt not later than September 1. If they are not, they should be induced to molt by withholding the feed for a few days. Late molting birds are not profitable as they rarely begin to lay until January.

There is a reason for this that reaches further than feed. Winter is the natural time for the feathered tribes to rest and when the winter's rest is commenced by the natural one of molting, nature plays a strong part by insisting on a "little more rest and a little more slumber"; we can fool nature a part of the time, but not all of the time.

It's good to know that "Tom Barron," the English White Leghorn man who has been such a continuous winner in our egg-laying contests, is safe and sound on this side of the herring pond. I was afraid Mr. Barron had "gone to the war" and we might have to confiscate his White Leghorns.

Mr. Barron's Leghorns are still in the lead and Mr. Quisenbury says they have led for five months out of seven with the highest number of eggs. And here is another of Mr. Quisenbury's pointers:

"The hens that are the heaviest layers eat more than the rest, it is true, but I have noticed that there is less droppings on their dropping boards, showing that all they eat goes to egg production, not to waste."

Now is not that worth knowing? Most anybody can notice these things when they are told about

FREE BOOK
Raising Calves without milk. Everything you need for stock and poultry raising. Write today.
F. F. SMITH & CO.,
1006 J St., Sacramento.

MOLTING TIME
is apt to be a time of trouble with your hens.
COULSON'S EGG FOOD
will help to keep them in good condition, saving loss and worry.
A healthy hen will molt quickly.
COULSON COMPANY
PETALUMA, CAL.

POULTRY BREEDERS' DIRECTORY

BABY CHICKS—White Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. All from heavy laying, healthy fowls, well mated. Now is the time to get your Winter broilers and Spring layers. Free circular. Roofden Poultry Ranch, Campbell.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 396, Los Gatos, Cal.

PETALUMA HATCHERY—Now booking orders for Fall. August, September and October chicks are highly profitable. Send for circular. L. W. Clark, Petaluma, Cal.

SEND for our Special Poultry Supply Catalog. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

INCUBATOR CHICKS—White Rocks and Leghorns. High class stock. Reed's Mahajo Farm, Box 5[illegible]

DIABLO WHITE[illegible] Special exhibition [illegible] per 15; $10 [illegible]

S. C. WHITE [illegible] layers. Write f[illegible] dini Ave., Riverside

MAMMOTH BRONZE [illegible] surpassed. Albert M. [illegible] to Ed. Hart.)

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

HOPLAND STOCK FARM—Incubator chicks, S. C. White Leghorns and White Plymouth Rocks. Hopland, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

ORPINGTONS—BUFF AND WHITE—Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

Rate in this directory, 3c per word each issue; if carried weekly for one year, 2½c per word.

PURE-BRED WHITE ROCKS. Mrs. J. B. Tupper, Ceres, Cal.

them, but few find time to observe closely enough themselves unless told of such things.

The best poultrymen are those who observe as they go along each day a little thing here and another there, all counting up in the end. Good layers are not grown in a day; they are the result of years of observation and painstaking care. Anybody can have them if they work the game right and stick to it.

Dissatisfaction in the East as to Panama-Pacific Show Dates.

The poultry journals of the East are generally grumbling about the San Francisco Show in 1915. The Poultry World says: "November 20-25 is entirely too late in the season for Eastern breeders who are then busy with stock sales; and besides the important shows of the east are close to those dates."

Again: "Another thing that should be changed is the length of the show. As planned, the exhibits are to be assembled on Thursday and Friday, and the poultry show proper will open on Saturday and extend through the next Thursday. If the Exposition is closed on Sunday, this means a five days' show, too short a time for a world's fair poultry show."

Eight Hour Law.

One woman who is advocating the eight-hour law says: "If it is going to bother farmers, why can't they work an hour a day extra themselves all summer? That would offset the time lost by the hired man." Does not this show how much the average woman knows of the fruit industry of this State, or perhaps the men either? The only way they would ever learn would be by raising the price so that it would touch their pockets. There would not be quite so much fruit canned for a while, but it would teach a lesson.

I wrote a letter on the eight-hour law to the Los Angeles Tribune, but the editor applied the blue pencil so bad that I hardly knew my offspring. But I don't believe this fool law will pass; everybody is up in arms about it down here.

I want to correct the idea held by the lady who wrote in the Press this last week from Bakersfield. It is not the working men that have gotten up or framed this law; it is the secretary of the Socialists of Southern California. What is more, I think Mr. Williams is a good enough man, but he does not understand anything about the agricultural or [illegible]icultural conditions of the State. [illegible] means well, but he has simply bitten off more than he can chew, [illegible] has to either swallow it or them to [illegible] brood sow ad[illegible] want to do marked for ide[illegible] to debate ord kept of he[illegible] assemblies, through some fa[illegible]d, but he such as improper[illegible] had no idea not do well w[illegible] such a confla- shows [illegible] it was a loaded idea, etc., etc. There are a whole lot of that kind of people going the rounds. It's easier to start things, if it's only gossip, than it is to stop them.

If this bill passes, I think I will frame a bill "me own self" and see if we can't make gingerbread men and women to order. What is the use of the "strenuous life" if we can get through so easy and smooth? Guess we will have to send for Teddy to come to California and talk up the glories of the "strenuous life."

ANOTHER INDIAN RUNNER BOOSTER.

To the Editor: Being a subscriber and an interested reader of your paper, I would like to say a few words in favor of the Indian Runner duck.

I have a small flock of less than 40 and find them fine layers, little trouble to feed and less to fence. I have had no trouble at all in disposing of the eggs, but of course the young drakes do not meet with a ready sale and for that reason we eat them. Two duck eggs will equal three hen eggs and when the price of eggs reaches 50 cents, why not use duck eggs?

There are some who can tell the difference on the table, but I have had people at my table say they "would like to try some of those duck eggs," when they had been eating them all the time and did not know it. Say what you may, the Indian Runner is the duck to help fill the egg basket and will lay right through the coldest weather we have here in the San Joaquin valley.—Mrs. H. C. Wallace, Bakersfield.

(It will be remembered that another subscriber from Sonoma county recently criticised the Indian Runner which has brought out the above communication from Mrs. Wallace. It is evident that this breed of ducks is still running high in the favor of many farmers. Who else has had experience with the breed?—Editor.)

MOTTLED SHELLED EGGS.

To the Editor: Can you kindly tell me why my hens should lay a mottled shelled egg and a remedy for same?—L. H. F., Walnut Grove.

(This is a characteristic of some breeds, but is sometimes caused by excessive fats in the intestines. In the latter case the protein should be increased and the carbohydrates decreased and the hens should be made to exercise more. This latter may be accomplished by either scattering scratch feeds in straw or by making them hustle harder for their feed in open fields.—Editor.)

It is wise to raise the crops your neighbors are raising—if they are making money from them.

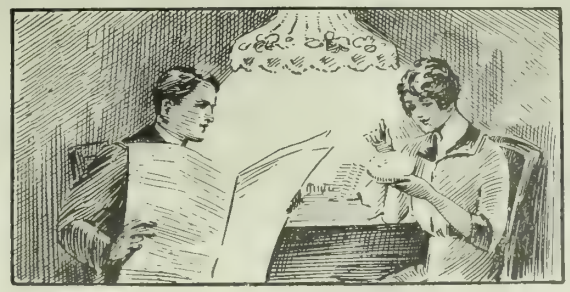
Publisher's Department.

One year ago last week the consolidation of the California Business Farmer of Stockton with the Pacific Rural Press was made. During the year we have succeeded in securing many of the Business Farmer subscribers to renew and become regular paid readers of the Rural Press. All those who did not renew have been discontinued as the time paid for expired. To fill the places of those who did not renew we have been able to secure new subscribers, and today the list stands clean cut, paid, Rural Press subscribers, all of whom pay $1 per year. We believe that we have now the best and largest list of paid subscribers of any weekly farm paper on the Pacific Coast. With the corps of paid solicitors we now have in the field we should make a great gain the coming year and every advertiser in our pages should secure wonderful returns from his anouncement in these columns. During the past week the number of new paid subscribers added to our list was 209.

More and more people are securing a copy of our new book "One Thousand Questions in California Agriculture Answered." The price of this book in connection with a subscription to the Rural Press is very modest, and if you haven't secured a copy as yet, write to us for the offer.

Gas for the Country Home

LIGHTING---HEATING---COOKING



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The Jackson Deep Well Turbine Pumps are so carefully designed and constructed they have a higher efficiency than any other pumps of this type.

Our motor driven pumps are absolutely noiseless and have neither valves, rods, nor gears to get out of order.

Write for our latest bulletin describing these pumps and also tables on hydraulics.

Our Jackson Catalog No. 47-C is free. Send for one.

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The Home Circle

HOUSEHOLD HINTS.

An effective plaster which will not blister can be made of equal portions of cayenne pepper and flour mixed with enough water to make paste—to be applied between cloths. As strength of pepper varies, the warmth of plaster may be adjusted by more or less flour.

Before packing a trunk put it on two chairs or stools. Save your back. back.

Sunbeams are the best kind of beams to support the strength and promote the healthfulness of the house and its inmates.

In case of earache put two or three live coals in a teacup and sprinkle granulated sugar over them. Place a funnel over this and let the steam and smoke go into the ear through the tube or neck of the funnel. This cannot injure the ear and always affords relief quickly.

A well dressed woman has no hanging buttons, loose threads, shabby braid, etc. The little things count.

There is nothing better to invigorate the body and produce a good circulation than long walks out in the open. Do not make the mistake of walking too fast or too far at one time. Throw back your shoulders, strike a set pace and keep it up. The result will be good health as well as a good figure.

Live today. Make it successful. Make it a day of progress, kindness and work. A lot of such todays in your old age will be pleasant to look back upon.

As age increases less nitrogen food is necessary than in early life. A heavy meat diet throws too much strain upon the kidneys, and as the power of elimination grows less and less the diet should therefore be carefully adapted year by year to the needs of the system.

Cosmetic gloves worn at night is one of the surest ways of keeping the hands in good condition and in counteracting any ill use which may have been their lot during the day's work. Gloves several sizes too large should be worn. Failing chamois gloves, choose heavy cotton ones. Both, however, must be cleaned frequently and aired or they will become stiff and of an unpleasant odor.

Lack of proper ventilation often causes sleeplessness. If you are sleepless, fill the lungs with fresh air, breathe deep and rhythmically, and soon you will fall asleep. A cup of hot milk and long, deep breaths of fresh air are better sleep inducers than drugs.

When dampness in a cellar or basement becomes objectionable it may be removed by anhydrous calcium chloride. One pound of the salt is sufficient for a large cellar. It may be placed in old tin cans. The moisture absorbed from the air collects in the cans. This, however, is not poured away, but is evaporated on a strong fire, and may then be used again.

Unslaked lime is best suited to exterminate mould. It is blown, in the shape of a fine powder, into the crevices and on the walls, which must be damp.

COOKING RECIPES.

It is quite possible to cook cabbage without perfuming the house, but not if carelessly boiled. One very good method is to slice the cabbage up fine, as for cold slaw, and immerse for five minutes in boiling water in an uncovered saucepan. It is then covered with cream sauce, put in a baking dish with crumbs over the top, and baked until the crumbs are brown. Cabbage, cauliflower or onions, cut into small pieces and cooked in an open saucepan with plenty of water develop little odor, and do not take so long in cooking. We notice that the cabbage served in Chinese restaurants, which is usually some of the tender green loose-headed varieties, is only cooked enough to be heated through, without losing its crispness, but it is very tender, and seems more digestible than our long-cooked cabbage.

Beef Peculiar.—Stew half a dozen good-sized tomatoes for two hours. Season with pepper, salt and a very little curry powder. Have ready the desired quantity of chopped cold beef (that has been left over from the day before). Line a baker with cracker crumbs, having buttered it thoroughly, then put in a layer of beef, a layer of tomato and then more cracker crumbs. Continue this until the baker is filled, having the last layer of crumbs. Put little pieces of butter over the top, and bake in a good, hot oven. This is a delicious lunch dish.

Twice-Breaded Cutlets. — Select fine, firm veal, and have the chops cut from the ribs and meat trimmed neatly from the end of the bone, leaving about two inches to decorate with fringed paper. Dip each chop into beaten egg, and then into fine breadcrumps, and set them in a very cold place for an hour; then dip them again in the beaten egg, and again roll them in bread crumbs, sprinkling well with salt and pepper. Put some nice clarified beef fat in a frying-pan and stand it on the range. When it becomes hot fry the chops carefully in it until they are a delicate brown; then lift them out and lay them on a hot platter, with the bone end toward the edge of the dish. Slip a fringed ring of tissue paper over the end of each rib. Pour the tomato sauce on the dish with the chops, being careful not to get any of it on the paper decorations. Veal requires to be well cooked, but mutton chops, breaded, should be cooked very lightly.

Competent authority asserts that 47 per cent. of all diseases are preventable. At a recent Western conference the recommendation for a corps of community doctors who should be held responsible for the continuous good health of the whole community, instead of aiming simply to cure the prevailing diseases, was favorably considered and acted upon. Prevention is the watchword of medical progress for today.

Country parson: "Now, Johnson, I really must insist upon your paying attention to the cleanliness of the pony and trap."

Man-of-all-work: "Well, sir, you see, what with orticulter and th' cow, I've very little time for 'ossyculter."

Bring up a Girl—

Along lines that will develop her into a robust woman. Give her Ghirardelli's Ground Chocolate. No fear of harmful after effects. It combines all the elements which growing girls require, and it has a taste that every child likes. Every mother should serve it because of its purity, its wholesomeness and the ease with which it may be prepared. Costs less than a cent a cup.

In hermetically sealed tins.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

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Opportunities for the Man of Moderate Means as well as the Capitalist

Every section holds out a welcome. Let us know what you want and we will endeavor to find it for you. A letter will receive prompt and careful attention. Address

BODE K. SMITH
Asst. General Passenger Agent
MILLS BUILDING, SAN FRANCISCO

Young Folks

THE PEBBLE'S LESSON.

How smooth the sea-beach pebbles are!
  But, do you know,
The ocean worked a hundred years
  To make them so.

And once I saw a little girl
  Sit down and cry
Because she could not cure a fault
  With one small "try"!

—Exchange.

THE BAD QUARTER.

"I'm afraid, Irene, you'll have to take my place today."

Irene Gage turned briskly from the window.

"Of course, Leona, I will," she said, after swallowing once or twice. "If you stay at home and let mother doctor your cold, you will be all right by Monday."

Just then the gentle little mother brought in the coffee, and they took their places at the breakfast table. Leona was twenty-one, and for a year she had had a small stock of fancy work materials for sale in the book and stationery store of a friend. In addition to selling these goods, she did embroidery for others. Her mother and sister helped.

Irene was fourteen and a tenth-grade pupil in the high school. There was an especial reason for interest in the store. In two months the small mortgage on their home was due. Mr. Gage had been a partial invalid, but now had regained health and was working at a fair salary. He would be able to pay the debt all but one hundred dollars. His wife and daughters were working hard, hoping to be able to surprise him by the needed sum.

So Irene cheerfully gave up her holiday, and listened to Leona's directions.

On reaching her sister's place of business, she proceeded to arrange the small stock of goods in the most attractive manner possible. There were several customers, then she sat down to work at the pretty linen photograph frame her sister had commenced to embroider with scarlet carnations.

She had just finished her mid-day lunch when a man entered and called for a paper of needles. He threw down a silver dollar. Irene brought the change, but he handed her back one of the quarters.

"I don't want that. It's no good," he said harshly.

Irene examined it closely. It was worn and defaced, and the stamp was different.

"Are you sure it is not good?" she asked.

"I'm sure you can't pass it off on me. I'm in a hurry," was his uncourteous reply.

The girl's cheeks flushed. She brought another quarter of a dollar without a word.

"I don't know where I got it, but it will have to be thrown away," she thought. "The loss will eat up the profits on the sales I have made this morning. Just when we are so anxious to earn money, too. It may be good, after all."

She stood a moment irresolute. Then she went to the cash drawer, put the quarter in, and went back to her work.

Customers were plentiful that afternoon. There was no opportunity of disposing of the quarter, however, until the short winter day was drawing to a close. Mrs. Van Dorn, a wealthy but eccentric old lady, entered and asked for ribbon.

"Let me see some of your work that is finished," she said after selecting a yard and a quarter of ribbon. "I want to have some embroidery done, if I can find some one who will do it well."

Irene deftly spread before her the few pieces of work Leona had on hand. Mrs. Van Dorn scrutinized them closely and asked many questions. The haunting coin was forgotten until Mrs. Van Dorn said, taking a half-dollar from her purse to pay for the ribbon,—

"I'll see about the work after I come back from Detroit next week."

Irene was disappointed. The order would have been such a help. As she opened the drawer to get Mrs. Van Dorn's change, the suspected quarter caught her eye.

"I'll give it to her," she thought. "She is so rich she will never feel the loss of twenty-five cents."

She gave herself no time for thought. Mrs. Van Dorn dropped the piece of money in her purse without looking at it, and started for the door.

"It's done," Irene said to herself, "and I'm so glad; for"—

She stopped abruptly. What had she done? An overwhelming sense of wrong-doing smote her. Mrs. Van Dorn was closing the door from the outside when her name was called.

"Come back, please, Mrs. Van Dorn," Irene said, opening the door. "Your change is not right."

"There was a bad quarter in the drawer," she went on as Mrs. Van Dorn re-entered the room, "and I gave it to you. I will get another."

In silence the lady extracted from her plethoric purse the coin given her by Irene. When she had received another in its place, she spoke:

"Queer you should make such a mistake when you knew it was there." The gray eyes shot a keen glance at the girl's agitated face. "Was it a mistake?"

Irene's scarlet lips trembled.

"It was not a mistake. The coin was given to me, and I tried to make myself believe it would not be wrong to pass it on, but"—

Her voice failed her. Mrs. Van Dorn showed no mercy.

"What made you call me back?"

"Because I saw, all in a moment, how wrong it was," Irene said faintly.

Mrs. Van Dorn went away. Irene bent over the box of ribbons to hide her tears. Then a customer entered, and she was obliged to give her attention to business.

The store closed at six. Irene found Leona was better and resting in the big, sleepy hollow chair before the parlor grate. Mrs. Gage was busy over the seven o'clock dinner.

It was so home-like. Sitting down on the hearth rug, she told her sister all. Leona's eyes filled with a tender light.

"You poor little thing, I ought to have told you about that quarter. Mr. Wilkins gave it to me two weeks ago. He found it when he made up his cash, and he told me perhaps I could sell it to Cousin Bert. You know he is an enthusiastic collector of old and curious coins. So, you see, you did not take the quarter in change."

"But I tried to cheat Mrs. Van Dorn. I've lost you the order for her work, too. O Leona!"

On Monday Leona resumed her duties. Thursday after school, Irene stopped in the store on her way home. The flush of excitement on her sister's face told her at once that something had happened.

"It's Mrs. Van Dorn," Leona cried, dropping in her lap the brown linen cushion she was embroidering with sweet peas.

Irene sank into a chair. "Well," was all she could say.

Leona nodded her golden head. "She's a dear. She has ordered a whole set of table linen embroidered in cowslips. I—we, rather, for you and mother must help, are to have twenty-five dollars for the work. Then the commission on the materials, which she buys here, will amount to five dollars more."

Irene gave a little gasp. "Oh, papa will surely have the hundred dollars now."

"You haven't heard it all. Mrs. Van Dorn said: 'Tell your sister that she is the bravest girl I know. The sense of right that enables one to face again and conquer a temptation is of God.'"

A month later Leona entered the parlor one evening, and held up a crisp five-dollar bill. "See, Cousin Bert gave it to me for the bad quarter."

"For what?" Irene cried. "Oh, is it possible it wasn't bad, after all?"

Leona laughed gleefully. "It proved to be valuable because of its scarcity. Bert has been looking for one to add to his collection for a long time."

Irene looked thoughtfully out across the snow-covered street. It had indeed been a valuable quarter to her.—Anna Johnson, in the New York Observer.

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The Markets.

(Unless otherwise noted prices quoted are f. o. b. San Francisco.)

San Francisco, Sept. 16, 1914.

WHEAT.

The eastern market shows sharp fluctuations, but the local trade is less affected by speculative considerations, and remains rather firm, with slight advances in forty-fold and turkey red. A good deal of red Russian has been bought for this market in the north, but the northern market shows considerable divergence between buyers and sellers, and trading is not very active.

California Club, ctl.	$1.80	@1.85
Forty-fold	1.85	@1.90
Northern Club	1.80	@1.85
Northern Bluestem	2.00	@2.10
Northern Red	1.80	@1.95

BARLEY.

There is nothing doing locally in brewing and shipping grain, though there is considerable barley passing through for export. Feed is moving gradually at the old prices, while the speculative market shows an easier tendency.

Brewing and Shipping		Nominal
Choice Feed, per ctl	$1.17½	@1.22½
Common Feed		Nominal

OATS.

The only change is an advance in red seed, for which there has been considerable inquiry. Other lines quiet as last quoted.

Red Feed	$1.40	@1.50
Seed	1.65	@1.70
Gray		Nominal
White		Nominal
Black Seed	1.75	@2.25

CORN.

Eastern yellow, sacked, has been marked up again. Manchurian corn is quoted at about $1.05, and South American at $1.90, but neither has a very important position in the market.

California Yellow		Nominal
Eastern Yellow	1.95	@2.05
Eastern White		Nominal
Egyptian		Nominal
Milo Maize		Nominal

RYE.

Offerings of rye are light, and a little more demand has brought an advance in values.

Rye, per ctl	1.50	@1.60

BEANS.

(On wharf.)

The bean market is still subject to frequent and rather sharp fluctuations, as the old crop is cleaning up and some offerings of new stock are beginning to appear. Some varieties are coming out rather late, and there is a strong demand for early shipment, tending to keep prices unsettled for some time. California bayos are again offered, and Mexican stock is lower. Cranberry beans have been marked down a little, and horse beans have advanced. Small whites are easier, and spot limas have declined rather sharply in the local market, though their position on the whole is quite strong. It is reported that dealers are having difficulty in filling their early contracts, as conditions have been unfavorable for threshing.

Bayos: Cal., pr ctl.	$4.00	@4.25
Mexican	3.75	@4.00
Blackeyes	3.50	@4.50
Cranberry Beans	4.00	@4.25
Horse Beans	2.75	@3.00
Small Whites	5.00	@5.25
Large White	4.00	@4.25
Limas	6.00	@6.25
Pea		Nominal
Pink	3.50	@3.75
Red Kidneys		Nominal
Mexican Red		Nominal

SEEDS.

Brown mustard is practically out of the market, though some dealers are putting out a quotation of 7c., at which practically no business is done.

Hemp is also higher. Some alfalfa is expected in shortly, but little imported stock is available, and domestic is expected to be higher than usual. A general shortage in the crop of miscellaneous California garden seeds is reported.

Alfalfa		Nominal
Brown Mustard, per lb		Nominal
Canary		Nominal
Hemp	3½	@4 c
Millet	2¾	@3¼c
Timothy	7½	@8 c
Yellow Mustard		Nominal

FLOUR.

California millers have again marked up their prices, in keeping with advances made in larger markets. These advances are based on the firmness of wheat, and there is also quite a strong demand for flour in domestic markets, with good sized shipments to the east coast from the north.

Cal. Family Extras	$6.60	@7.00
Bakers' Extras	5.50	@6.00

HAY.

Local arrivals have decreased considerably, but a good deal of the previous receipts had been held over, and dealers say they have had to keep a good deal of hay in the cars and pay demurrage. The lower and medium grades still compose the bulk of the arrivals, and a good deal comes on consignment. In a good many districts, however, growers are still holding their hay rather firmly, and are gradually getting it under cover, in expectation of a better market later on. There have been rumors of inquiries for hay for export, and if any important business should result the situation might be greatly relieved.

No. 1 Wheat, or Wheat and Oats	$8.00	@9.00
do No. 2	6.00	@7.50
Tame Oats	7.00	@11.00
Barley	6.00	@8.00
Wild Oats	6.00	@8.00
Alfalfa	6.00	@9.00
Stock Hay	4.50	@5.00
Straw, per bale	30	@45c

FEEDSTUFFS.

Rolled oats and barley show a further advance, and cocoanut meal is a little easier. Otherwise there are no changes, bran and shorts remaining firm but quiet. There is a very fair movement of alfalfa meal at the present low prices.

Alfalfa-Molasses Meal, per ton	$19.00	@20.00
Alfalfa Meal, per ton	13.00	@14.00
Bran, per ton	30.00	@31.00
Oilcake Meal	33.00	@35.00
Cocoanut Cake or Meal	25.50	@26.50
Cracked Corn	42.00	@43.00
Middlings	34.00	@35.00
Rolled Barley	25.00	@26.00
Rolled Oats	31.00	@32.00
Shorts	33.00	@34.00

VEGETABLES.

The vegetable market is getting back into fairly good shape, though some lines remain rather low in price. The inside price of bell peppers has gone up a little, and both beans and peas show more firmness, most offerings moving off without difficulty. Tomatoes, also, are doing better, and though very plentiful, some choice stock sells up to 60c. Cucumbers remain quite cheap, and egg plant and celery are lower. Summer squash and okra are bringing better figures, and the only offerings of green corn at the moment are of Alameda stock, which sells readily at higher prices than for some time past.

Green Peppers, bell lugs	25	@35c
Green Peppers, Chili	35	@50c
Carrots, per sack	35	@50c
Green Peas, lb	3	@5c
Tomatoes: Delta, lugs	30	@60c
Beans: Wax, per lb	2	@3c
String	2	@3c
Lima	2	@3c
Cucumbers, lugs	20	@30c
Eggplant, lugs	25	@35c
Green Corn, sack	1.00	@1.50
Summer Squash, box	25	@30c
Cream Squash, box	30	@40c
Okra, box	35	@40c
Celery, doz.	25	@30c

POTATOES AND ONIONS.

With the exception of garlic, everything on the list remains weak, with large offerings and very little demand outside of the local market, the requirements of which are limited. Potatoes show no further decline, but sweets are a little lower, and about the best that can be secured for onions of ordinary quality is 50c.

Potatoes:		
River Burbanks, ctl.	70c	@$1.00
Sweet Potatoes, ctl.	1.40	@1.50
Onions, New Yellow, sack	40	@50c
Garlic, Cal., per lb	10	@12½c
do. Oregon	10	@15c

POULTRY.

Young chickens are doing a little better this week, though old stock is unchanged, with ample supplies for all local needs. Turkeys so far receive only moderate attention.

Turkeys, old, per lb	20	@21 c
Turkeys, young, per lb	24	@25 c
Large Broilers	20	@21 c
Small Broilers, per lb	20	@21 c
Fryers, per lb	20	@21 c
Hens, extra, per lb	17	@18 c
Hens, large, per lb	18	@19 c
Small Hens, per lb	15	@16 c
Young Roosters, per lb	20	@21 c
Squabs, per doz.	1.50	@2.00
Geese, per pair	2.00	@3.00
Ducks, doz.	4.50	@8.00

BUTTER.

Prime firsts have advanced ½c, but extras dropped to 30c the first of the week, and have gone up only ½c since then. There is still some outside demand, but supplies are coming in freely from up the coast, as well as the interior, and tend to prevent any particular firmness.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31	31	30	30	30½	30½
Prime	28½	29	29	29	29	29
Firsts	27	27	27	27	27	27

EGGS.

The output in the principal producing districts continues seasonably, light, and with a lively local demand the upward movement continues, at least in extras. This grade dropped a little the first of the week, but has since been marked up to 40c. Pullets, after advancing a cent, have dropped back to less than last week's figures.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	39½	39½	39½	39	39	40
Selected Pullets	36	35½	33½	34½	34½	35

CHEESE.

All grades continue firm, with a little livelier demand, and while flats are unchanged, Y.A.'s are up ½c, and Monterey cheese has advanced sharply.

Fancy Calif. Flats, per lb.		14½c
New Young Americas, fancy		15½c
Monterey Cheese	14½	@15 c

At Los Angeles the dairy produce markets for the past week have been as follows:

Butter:	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	29	28½	28	28	28	27
Eggs	36	36	35	35	35	35
Cal. Cheese:	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

The demand locally continues rather light and, while most lines remain fairly steady in value, several descriptions have been marked down to dispose of unwieldy accumulations. Huckleberries are coming in very freely, and are a little lower, and raspberries have dropped sharply, while other berries are firmer. The apple market is decidedly sluggish, and with large offerings, prices show a tendency to weakness. Bartlett pears are also rather easy. Peaches in lugs are extremely cheap, with large arrivals of rather unattractive quality, though choice lots in small packages bring very fair prices. Plums and prunes are unchanged. Black figs continue to come in freely and are lower, while the white variety shows a slight advance. No change has developed in the melon market, though nutmegs from the river district move off somewhat better. Attractive lots of tokay grapes are higher; but while all desirable lots of grapes are held up to the quoted figures, much of the arrivals consist of poor stock which has to be sacrificed.

Huckleberries, lb	6	@10c
Blackberries, chest	4.00	@6.00
Strawberries, chest	2.00	@3.50
Raspberries, chest	3.00	@6.00
Apples, New Crop:		
Belleflowers	65	@75c
Spitzenberg	65	@90c
Gravenstein	50	@1.00
Crabapples	40	@85c
Quinces, box	75	@1.00
Nectarines, crate	75	@1.00
Pears, box, large	1.00	@1.35
do No. 2	50	@75c
Peaches, lugs	25	@50c
do. small, box	30	@80c
Plums, crate	75	@1.25

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Rates 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

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CHEAP LANDS FOR SALE in Byron-Bethany new irrigation district, one of the best irrigation systems in the State or West. A fine climate and good water. Good schools and churches. Taking everything into consideration there is no place in the State where there are such good opportunities as in the Byron-Bethany country. Land values are very reasonable and terms easy. If you are looking for something good, call on J. W. Wayne, Real Estate Agent, Byron, Contra Costa County, Cal.

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FOR SALE—On account of sickness and death, forty acres of fine income property. Twenty-five acres best varieties full-bearing almonds. Four and one-half acres Manzanillo olives and three acres of wine grapes. Must be sold at once. Terms. Address E. C. Boles, Mingesdale, San Joaquin County, Cal.

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FOR SALE CHEAP—Send for complete printed description. Two acres. Poultry. Orchard. Good buildings. Near school. Joining city limits. Sonoma Co. Geo. Langlois, Sebastopol, Cal.

TO LET—300 acres of alfalfa land on Dixon Ridge. Abundance of water for irrigation. Apply, J. H. Glide, Dixon, Cal.

FOR RENT OR SALE—1018 acres of grain and alfalfa land near Williams. H. V. Traynham, College City, Cal.

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WALNUT TREES—Eureka and Elmonte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebelle, Cal.

SPINELESS CACTUS—Any quantity, 6 cents a slab; 100 and over, $5 a hundred. Samples, including postage, 20c. 295 Page St., San Jose.

THORNLESS CACTUS SLABS for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

BEES.

BEES AND HONEY—Bee-keeping pays big. Price list bees, instruction books free. Samples and prices pure California honey, ten cents. Spencer Apiaries Co., Box 12, Nordhoff, Cal.

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THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

WANTED.

LOCAL REPRESENTATIVES to write orders for Roeding "True-Trees." Highly satisfactory selling plans and commission offered ranchers, fruit growers, real estate men of salesmen, for a part of their time this Fall and Winter. Write at once for full particulars. FANCHER CREEK NURSERIES, Fresno, Calif., care Holland Bldg.

INDUSTRIOUS AND CULTURED young German desires position on modern farm. No wages expected, but opportunity to learn and pleasant surroundings desired. Applicant in good health. Best references. Reply to Room 306, Merchants' National Bank Building, San Francisco.

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WANTED—To lease good farm near coast, preferably with option to buy. 318 W. 62nd St. Los Angeles.

MISCELLANEOUS.

FOR SALE—Rumley Toe-Hold Gas Tractor. Fourteen horse power on draw bar. Used 90 days. One John Deere engine plow; four 14-inch bottoms, ten foot double acting, cut-away disc. Engine used 90 days, implements less. All in perfect order. Owner retiring from orcharding. Terms. Box 3, Live Oak, Cal.

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MUST GO—1000 Burbank Spineless Cactus, $10 per hundred. Milch Goats, Does and Kids. Edgar Woolbridge, Lakeport, Cal.

do, lugs	75@ 1.25
Prunes, lugs	75@ 1.25
Figs: Black, double layer	40@ 60c
White, single, layer	25@ 40c
Cantaloupes, crate	50@ 60c
Watermelons, doz	75@ 1.50
Casabas, lugs	50@ 75c
Grapes: Malagas, crate	40@ 60c
Tokays, crate	55@ 75c
Seedless, crate	40@ 50c
Muscat, crate	50@ 65c
Black	25@ 50c

DRIED FRUITS.

The renewed activity in dried fruits noted last week still continues, though prices on several lines show less firmness. Apricots are very uncertain, as little export business has been done; though a shipment has just left for England, and more business is expected. Figs are quite firm, with a poor outlook for imported stock, and both white and black are higher. Prunes are quoted locally ½ lower than last week; but the situation appears to be quite strong, as the crop has turned out below early estimates, especially in the large sizes. Packers are said to be trying to buy back the prunes sold earlier at a stiff premium; and it is likely that some effort is being made to depress prices in the country. Peaches hold fairly steady, but are quiet, and pears have been marked down sharply. Raisins show several changes, the top price of muscats being lower, while sultanas are higher. The New York Journal of Commerce says:

Wires from California indicate a better feeling in apricots, but no important business is reported. According to one broker his principals are declining to sell Northern Royals at less than 8¾c f. o. b. basis for choice to fancy. Peaches appear to be steady, but are not moving to any extent. Whatever of strength the market displays appears to be due to the apparent determination of holders to abstain from forcing stock on a reluctant market. In California prunes there are no fresh developments. It is evident that there will be a greater shortage in 30s and 40s than in any of the other sizes. Short sellers continue to offer a handsome premium to buyers of these sizes who made early contracts, paying 6½c for 30s and 6c for 40s, or even more in some instances. Little new business in October shipment is being put up to the coast by local jobbers.

Evap. Apples, 1914	5 @6 c
Apricots, 1914	6 @9 c
Figs: White, 1914	4 c
Black	2½ @2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, 1914	5 @6 c
Peaches, new	3 @4 c
Pears	6 @7 c
Raisins (in sweatbox):	
Loose Muscatels	4 @4½c
Thompson Seedless	5 @6 c
Seedless Sultanas	5 c

CITRUS FRUITS

The eastern citrus markets are showing a little better prices for Valencia oranges, while lemons continue lifeless. At New York, Monday, Sept. 14th, the auctions averaged about $2.50 per box for Valencias; the range of prices being from $1.55 up to $3.80. Lemons sold for $2.80 and $3.95 per box, average. Shipments from southern California for the season, up to Sept. 13th, were 36,183 cars of oranges and 2,689 cars of lemons.

Oranges are seasonably quiet in the San Francisco market, with prices unchanged. Lemons have dropped back to about normal figures, as supplies are increasing, and offerings of imported stock in the eastern markets have been more liberal.

Oranges:	
Valencias, box	$1.25@ 2.25
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, bx	1.00@ 2.50
Lemons, box	2.50@ 5.50
Limes, case	Nominal

NUTS.

A good many new almonds are appearing in the local market, and the crop is moving off rapidly at the new prices, owing to the scarcity of imported stock. New walnut prices are to be announced in the latter part of next week. The crop is now maturing in several districts, and appears to be rather large.

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nomnial
No. 2	Nominal

HONEY.

Supplies are coming in more freely from several producing points, and with a very moderate local demand, and no important shipping business, values remain easy.

Comb: White	12 @14 c
Amber	8 @10 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½ @ 6 c
Off grades	3 @ 4 c

BEESWAX.

There appears to be no important demand at present, though prices are firmly held. Complaint is made of a good deal of adulterated stock on the market. There is quite a lot of Mexican wax offering, but this has found little demand.

Light	32 @32½c
Dark	27½ @31 c

WOOL.

There has not been much activity in the California wool market so far. A few sales have been made, but many buyers are still rather uncertain. Conditions, however, look rather favorable, and it is expected that the fall output will soon be moved at satisfactory prices.

Fall clip:	
San Joaquin	10 @12½c
Northern	16 @20 c

HOPS.

The hop market is still in a rather hesitant condition, with some divergence in view between buyers and sellers. Transactions are reported as high as 20c, and offers of 22c are said to have been made for Sonoma hops, but no business at this price is definitely reported.

1913 crop	16 @20 c
1914 crop	16 @20 c

LIVE STOCK.

Few changes are noted, though heavy hogs are quoted a little lower than last week. Supplies of hogs, however, are light, and the market is decidedly firm.

Steers: No. 1	6¾ @ 7 c
No. 2	6½ @ 6¾c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5½ @ 5¾c
Bull ands Stags	2½ @ 5 c
Calves: Light	9 @ 9½c
Medium	8 @ 8½c
Heavy	6½ @ 7 c
Hogs: Grain-fed, heavy	
250 to 350 lbs	9¼c
150 to 250 lbs	9½ @ 9¾c
100 to 150 lbs	10 @10¼c
Prime Wethers	5 @ 5½c
Ewes	4½ @ 5 c
Milk Lambs	6½ @ 6¾c

HORSES.

The local market continues fairly active, three rather large lots of good medium to heavy all-purpose horses from northern California, Oregon and Utah having appeared at auction this week. There is evidently a much more general desire on the part of sellers to move their stock than earlier in the season, and local buyers show much more willingness to come into the market than a month or so ago. The large offerings, however, are not very quickly cleaned up, and values are not altogether what they should be. With cheap hay, and renewed commercial activity in the city, a much better demand is expected during the next few months.

Heavy drafters, 1700 lbs. and over	$225@275
Light drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

DRESSED MEATS.

Steers	10 @11 c
Heifers	10 @10½c
Veal, large	13½ @14 c
Small	15 @15½c
Mutton: Wethers	10 @11 c
Ewes	10 @10½c
Suckling Lambs	11½ @12½c
Dressed Hogs	15 c

SPECIAL DECIDUOUS FRUIT MARKETS.

By J. L. Nagle.

Sacramento, Cal., Sept. 12, 1914.

Practically all the tree fruit shipments have been cleaned up, though some shippers have a few late peaches on track at middle west diverting points, holding the same for speculation. There is little or no demand for peaches, with the exception of slight activity in a few of the eastern markets for clings.

On account of the heavy shipment of Tokays from the San Joaquin Valley points during the last two weeks, prices have ruled only fair. The demand is not equal to the supply at the present time and cars are forced into the auctions that ordinarily should not be sold east of Chicago. Considerable competition is being felt from the Middlewest States, and, as there is a large crop of New York State and Michigan grapes, which are sold very cheaply, naturally these homegrown fruits have the preference.

The demand for Malaga grapes in the smaller markets is on the increase, and, though the auctions are paying only fair prices for this latter variety, all the shipments seem to be taken care of satisfactorily.

The markets for the past week ranged as follows:

New York: Bartlets $1.45 to $2.83; B. Hardy $1.35 to $2.00; G. Duke $1.60; Elbertas 76c; Kelsey 95c to $1.03; Gross 85c to $2.00; Crawford 72c; Malagas 85c to $1.35; Tokays $1.02 to $2.20; Florin Tokays $1.32 to $1.42.

Chicago: Bartletts $1.25 to $1.95; B. Hardy $1.38 to $1.85; G. Duke $1.35 to $1.60; Kelsey $1.04 to $1.50; Gross $1.48; Crawford 70c to 85c; Malagas 60c to $1.25; Tokays $1.10 to $1.90.

Minneapolis: Bartletts $2.40 to $3.25; B. Hardy $1.50 to $2.00; G. Duke $1.15 to $1.25; Giants $1.65; Gross $1.65; Malagas 75c to $1.15; Tokays 75c to $2.35.

Boston: Bartletts $1.75 to $3.35; B. Hardy $1.65 to $2.00; G. Duke $1.05 to $1.70; Giant $1.00 to $1.75; Elbertas 65c to 80c; Kelsey 50c to $2.90; Gross 75c to $1.80; Crawford 65c to $1.00; Malagas 65c to $1.30; Tokays 75c to $1.65.

Philadelphia: Bartletts 80c to $2.45; B. Hardy 75c to $1.20; Malagas 50c to $1.45; Tokays 35c to $1.55.

Total shipments of deciduous fruits from California for the season up to Sept. 14th were 10,166 cars, as against 8927 cars to same date in 1913.

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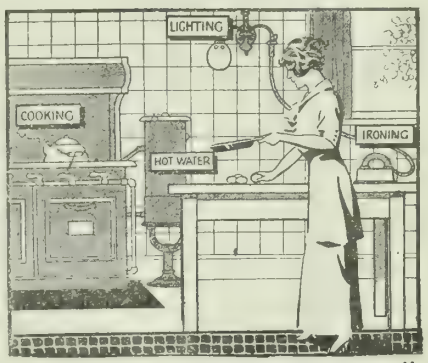

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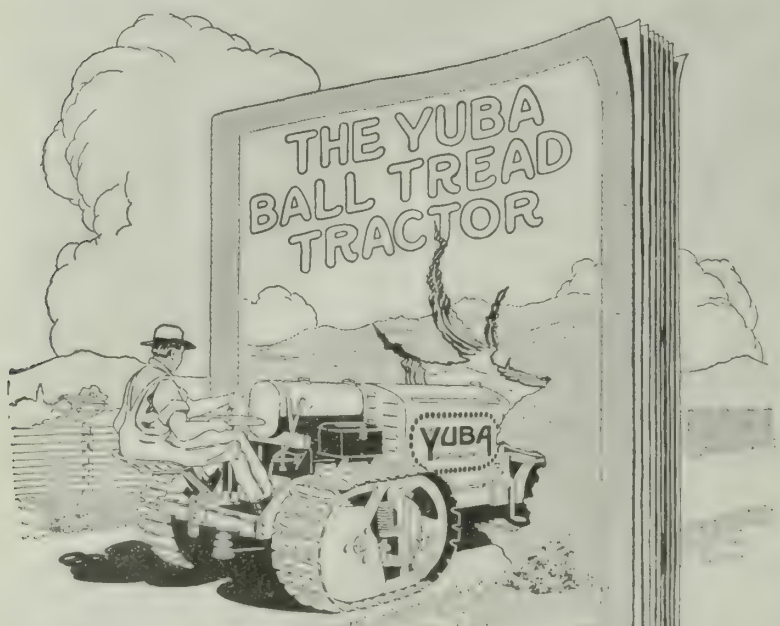

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THE PACIFIC RURAL PRESS

Vol. LXXXVIII—No. 13 San Francisco, Saturday, September 26, 1914 Forty-Fifth Year

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Pajaro District Apple Culture.

[By W. H. Volck, Watsonville, at State Fruit Growers' Convention.]

The Pajaro District, so called, is that portion of Santa Cruz and Monterey counties included in the Pajaro Valley and extending into the adjoining hill sections north, south and east. Most of this area lies within ten miles of Monterey Bay and has a typical Coast climate, differing but little from that of the region around San Francisco Bay.

Summer temperatures are seldom high, and may often be quite cool, due to frequent and protracted fog envelopments. The winter temperatures are moderate, and the average condition quite humid, with a rain fall seldom less than 20 inches, and frequently 30 or more.

Introduction of Apple Culture—Originally, this district was devoted to grain and field crop culture, with fruit trees confined to door-yard plantings. A number of small apple orchards were so started, and developed quite without attention, except a little plowing and pruning.

At this time (1870 to 1885) the Santa Clara Valley was producing apples in a commercial way, but this industry suffered greatly from the ravages of the codling moth and San Jose scale. So much so that production was much reduced, and eventually most of the orchards were rooted out. This left an unsupplied market, and the fruit dealers were forced to look elsewhere for stock.

It happened that certain Austrians, who had been active buyers in the Santa Clara Valley, learned of the small orchards about Watsonville, and investigated them as a possible source of fruit. They found a considerable number of bearing trees producing clean fruit, as no pests had yet been introduced. Still better, the owners placed but little value on the crop, most of which was allowed to fall to the ground and rot. It was an easy matter to buy this crop on the trees at figures entirely satisfactory to the dealers. Often the price paid amounted to less than ten cents a box. Of course, the buyers had to do the picking and packing, while the owners reserved enough for home use, and considered what they received for the balance as clear gain.

The fact that apples could be sold, and the culture involved so little expense, soon began to attract attention; also, the gradual failure of the grain lands due to continuous cropping was beginning to make itself felt; and it was not long until orchard planting became popular. These plantings were still further stimulated by the development of the berry industry, when it was found that young trees could be grown to practically bearing age in the berry fields.

Apples were not the only trees planted, however, as the prune industry received a great boost by the success of one or two early plantings. This success was short lived, but the tree planting idea had taken firm root, and the stump-puller was followed by replanting of apples, or in some cases, apricots. Pears also figured in the early plantings, but unfortunately, these came into bearing at a time when this fruit had little market value, and the growers soon removed the trees and replanted with apples.

A number of varieties figured in the early plantings of apples; but it became apparent that the locality was not well adapted to the red sorts, as the color was not properly developed. Two yellow apples quickly came into prominence; namely, the yellow Bellflower and Yellow Newtown Pippin. These varieties proved such favorites that at the present time they comprise most of the fruit produced in the district.

With the increased production came better market facilities, and an era of considerable prosperity dawned in the new industry. A comparative freedom from pests still continued as the cool summer climate prevented the rapid increase of the codling moth.

This orchard is thrifty, but if it were not, some of the big limbs would need removal, after which extraordinary care would be necessary to escape premature decline on account of wood rot. A few main limbs are better.

Profitable crops from large orchards led to still further increase in the acreage.

The greatest planting of all took place in the last years of the 19th century, and especially in 1900. At this time the planted area amounted to more than 15,000 acres, with about 50% in bearing. Thus it is seen that the Pajaro district was much in advance of other western apple districts, and for a time enjoyed the distinction of producing more fruit than all the other localities put together. Lack of competition made marketing comparatively easy, even for inferior fruit, and up to 1907 this happy condition continued to improve.

Marketing Troubles.—The method of marketing developed along the lines that it started; that is, fruit buyers (mostly Aus-

(Continued on Page 300.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 22, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka	1.22	1.54	.87	76°	46°
Red Bluff	T	T	.41	94	52
Sacramento	.00	.00	.19	90	52
San Francisco	T	.02	.10	78	54
San Jose	.00	.00	.23	86	46
Fresno	.02	.02	.06	94	54
Independence	.00	.16	.03	86	50
San L. Obispo	.00	T	.26	82	48
Los Angeles	.00	.01	.00	86	54
San Diego	00	.00	.00	76	56

T means trace

The Week.

Dame California looks backward this week and presses an apple upon mankind, as did Mother Eve in that older Eden. It has always been a mooted question among biblical commentators and pomologists whether Eve tempted Adam with a crab apple or a wild orange or a golf-ball: and just as much doubt clings to the traditional emblem of conquest held by the statues of Venus and Helen of Troy, for the fruit cut in ancient Hebrew or Greek words, and in antique marble as well, indicates something small and round and defies identification with what we know as an apple. Still early translators were justified, no doubt, in employing a word which would carry significance to the cold northern intellects to which they yearned to appeal; besides, to think of Adam as taking the bait of an orange or a golf ball, both, perhaps, remotely known as tokens of luxuriousness and of idleness, would create doubt of the virility and seriousness of Adam, their great ancestor, among peoples of Teutonic extraction with Viking variations. And so perhaps, in a way, California is also justified in exalting the apple as a token of her productive might—to impress upon the northern mind the fact that California is not wholly given to dates, olives, raisins and pomegranates, characteristic of those abodes of ease where man first sinned and where men have lingered since that time, for thousands of years, in moral doldrums, while bolder, hardier men, who exalted the apple as the king of fruits, were going forth to dominate the world.

Is the Apple Distinctively Northern?

It is our conviction that California was first to demonstrate on a commercial scale that the apple cannot be truly regarded as a distinctively northern fruit. And by "northern" we do not intend to be limited wholly by degrees of latitude. If we were, we should lose by the demonstration of the success of the apple in some of the cotton states, which antedates California achievements. We depend upon "southern" as signifying something of semi-tropical —and but few of the cotton states would lay any claim to that climatic character. Of course, despite the uncertainty of the antiques to which we have alluded, the apple was known as such in the Mediterranean countries all through the historic period and the improved apples of today are probably the result of development in all the ancient habitats of their progenitors, for the apple is most widely indigenous. But we do claim that California can contend for the credit of first putting a semi-tropical apple on its true footing in the world's trade, for in parts of the world where, from Herodotus to the pomological birth of California, the apple mingled its perfumes and colors with those of the orange, the fruit remained to decorate the hearthstone while its distinctively semi-tropical sisters, the orange and the lemon, rolled grandly a-world in the chariots of international trade. California decked Cinderella for the ball: California won for her the prince's favor and opened the way for semi-tropical apples from the southern hemisphere to enjoy the advantage of their cross-season production.

Valley Apples.

It required two or three decades' experience to enable California pioneers to clearly see the relation of California climatic conditions to successful apple growing. During early years there was conceded superiority in apple growing to Oregon, whence large supplies were drawn during our notable mining period. Early Californians thus shared in the world-conviction that good apples must come from the north. But it is worthy of note that the present fame of apple growing at the north is no part of the traditionary fame of the Oregon apple, which has been handed down from '49 and the spring of '50. The Oregon apple, which the California pioneers worshipped and were disposed to surrender the horticultural birthright, was not a mountain apple at all. It was grown in the lower levels of the Willamette Valley and perhaps on the lowlands of the Puyallup and in other coast regions adjacent, and its fame came, not from comparison with either California coast nor California mountain apples, but with apples grown in the low foothills and near the rivers of the great valley where the first mines were and where nothing but an early apple for immediate use is worth growing even to this day. When the coast apples of Oregon and California are compared there may be no particular difference in the fruit perhaps, but California has the coast apple business developed to a volume of prime, clean fruit and breadth of trade which have made the state famous both at the east and abroad. And this California coast valley fruit will always be in demand for distinctive trade and particular markets, perhaps, providing large groups of Californians work together for the development of culture, protection and marketing, as the people of the Pajaro valley and the Sebastopol district have done during the last decade. It is likely that they will meet new difficulties as they have met and vanquished the old ones.

A Special Field in Valley Apples.

California's first mistake, which is not yet wholly corrected, lay in confused conceptions of apple growth and trade and much has been lost in trying to grow the wrong apple in the wrong place. It seems clear enough now that though some apples may have to go to considerable elevations for the best development, other apples, both for pomological and commercial excellence, must be grown under the distinctive advantages of the coast valleys. All apple literature and all common experience show that different varieties of apples require different conditions for their best development and the trade requires that such special adaptation be discovered and be made to regulate the activities of planters. There is every reason, therefore, to think that there may be apples of every season of ripening which suit our valleys better than higher elevations anywhere.

The present disposition of apple planters is to grow long-keeping winter varieties to secure the manifest advantages of such fruit for long distance marketing This special attention to one phase of apple growing should convey the suggestion that more should be done to develop markets for summer, fall and early winter varieties for all of which California has distinctively adapted districts and can market such fruit everywhere west of the Rocky Mountains and south of the Arctic Circle, while locally-grown apples over this vast area are still in the bullet or base ball phases of growth. This is a field of production which must be distributed through the interior valley and foothills and the coast valleys, according to the special growing conditions which are found in each of these situations. Every advance in the settlement and development of the wintry districts of the Pacific slope opens wider the avenues for the employment of the unique advantages of early growth which a relatively small area of the slope possesses.

Not only the nearer markets which are thus expanding but the more distant countries around the Pacific border and especially, perhaps, those southern regions which will come into neighborly relations with us through the Panama canal and along all the currents of transportation which it will set in motion there will be new demands for apples during all the months before the latest keepers mature. This is a field in which there will be practically no competition with California valleys, and no matter what is done with winter apples here or elsewhere, this opportunity will remain open to us.

Late, Long-Keeping Apples.

But though California has the distinctive advantage in the summer-and-fall-apple line, there is also every claim to be made for the winter apples also. They are the product of a slow and long growing-season and places for them are immediately on the coast or well open to it and at elevations on the mountains and plateaux, all of which escape the forcing conditions of the interior valley and foothill regions. As compared with the late apples of the coast flats, it is usually conceded that the mountain apples of both the coast and interior ranges are superior in finish and beauty. But

this superiority of the mountain apple is not a recent discovery nor are the conditions which impart it at all restricted to the parts of the coast which are now making greatest claims to them as a distinctive natural endowment. The grand beauty and keeping quality of California mountain apples were demonstrated soon after the American occupation and before any commercial greatness in our fruit products was thought of. The fact was thrown in the world's eye at the Centennial Exposition in Philadelphia in 1876. A systematic demonstration was made at the New Orleans Exposition of 1885, where apples grown at elevations of from two to four thousand feet in different parts of California were shown in June of the following year in competition with the fruit grown in the mountains of Arkansas and Missouri and the few specimens remained in good show condition while the fruit upon competing plates was several times replaced. This test was accidental in a way because the California exhibitor had no reserve stock to replace with and was forced to let his first specimens stand up against all comers and their behavior was a revelation to all beholders. California made the record then for the supreme quality of winter apples grown at elevations in a semi-arid climate and the question which has recently arisen as to whether California can grow as good apples as the northern states of the coast which have similar climatic characters, should be reversed. Can they grow as good apples of that class as we?

What We Can Learn from the North.

On the commercial side, however, our northern competitors have passed us. They have decided advantages in transportation; they are almost out of sight of us in the important matter of growers' organizations for standardization and handling of fruit as applied to the apple: they are concentrating upon a single fruit and upon a very few best varieties—as we are doing with the orange, but we cannot compare with their concentrated and systematic work in connection with any other fruit which we grow. We must do this with all commercial fruits if our production is to be much increased. But giving them this credit, and thanking them also for the confidence and bouyancy which their distinguished successes will contribute to the spirit and development of all the fruit interests of the coast, we must claim that they have demonstrated nothing distinctive in natural adaptations beyond what California elevations possess. The high valleys of Lake, Mendocino and Humboldt comprise half a dozen districts like Hood River; the Shasta region has all the variations in altitude and exposure which has eastern Washington from Wenatchee to Walla Walla and from North Yakima to Spokane, and Mt. Shasta is higher and handsomer and can shake biting breezes from his shoulders which will bring just as bright a red to the cheek of the apple and as deep a blue to the nose of the grower as any of the northern snow-clads can produce. There are also high valleys in the central Sierra region and in the mountains of southern California, where the "warm days and cool nights," which our northern friends are claiming monopoly of, are the regular thing during the growing season and where the winter is marked by heavy rains and snow flurries which are just as cold and wet as theirs.

Better Apples for California.

The Pajaro valley Bellefleur is a demonstration that an apple which is notable everywhere for being very exacting in requirements for success, does find in the Watsonville district conditions which bring the fruit to a degree of perfection which is rarely if ever attained elsewhere. It is altogether probable that there are other varieties which will exhibit similar content and display other characters and commercial suitability and attractiveness. The value of the Bellefleur was demonstrated through the chance planting of it by the pioneer orchardists of the valley. There should be provided in California a means for testing out all old varieties which have not been tried and all promising new varieties under competent pomological observation and comparison.

There are other varieties which attain acceptable characters and local desirability in the main, but disclose some defects which limit their value. This may be due to some requirement for full development which the local conditions do not include or to some peculiar behavior of the type which has been thus far prevalent. In either case the effort to retain the variety but to find a more suitable type should be systematically made. This, too, is a matter for close pomological study and comparison and it is analogous to the effort which is being made in Southern California for the discovery or development of superior types of the navel orange.

Drying in the Shell.

The proposed 8-hour law is moribund and that is no proof of the goodness of it. It dies thus young because it is so irredeemably bad. The state attorney general has written an opinion, for which we may have space in a later issue, showing that if this ill-omened bird should be hatched it could not be reared because the courts would hold that its purpose traversed the rights of men as guaranteed by the constitution. At the moment of this writing we cannot judge what effect the decision of the attorney-general may have upon an initiative amendment, but if it should have no open effect upon its career as a thing to be voted upon, it certainly should cause all supporters to abandon its defense because the condemnation of it afterwards, if that should become necessary, would be a waste of time and money. Besides, there is a danger that assurance of its killing by the courts may make opponents careless about voting a negative on it, and this would have the effect of creating a false impression of popular support. If the attorney-general has killed it, well and good; the people, by vote, should kill it again.

Queries and Replies

Cover Crops to Reduce Moisture.

To the Editor: I am thinking of using sorghum broad casted for a cover crop in my two-year-old prune orchard on acocunt of the rank growth it makes, but I wish to know if the decaying sorghum forms any acid injurious to the prune. Will cow peas be better than sorghum considering fertility and humus added to the soil? I plowed under a heavy stand of burr-clover this spring and have again seeded to clover but as a summer cover crop I wish to use one of the above. I don't want to use alfalfa because with the dense foliage it holds the top soil too moist and is liable to cause the roots to grow too close to the surface and when the alfalfa is to be plowed out, too many roots are liable to be cut, thereby damaging the tree by too strong root pruning.—F. A. F., Glenn.

As your problem seems to be to get rid of moisture and not to conserve it, we believe a broadcast of sorghum will do that during the frost free season better than any other plant known to us. It will not catch any atmospheric humus. For catching nitrogen, cow peas would be better, but for pumping out water not so good, and for covering the surface against evaporation, cow peas would be worse than alfalfa. With such moist soil and plowing under green stuff twice a year, you are in danger of souring the soil, but you can correct that by liming. We are not aware that green sorghum will give you any worse acid than an equivalent amount of other green stuff. The treatment you propose ought to slow down your prune trees. Under more arid conditions it would run them out.

Fertilizing Young Trees.

To the Editor: I planted, last spring, an acreage of Bartlett pears and apples, most of them two years old now. This fall I desire to use fertilizer and appeal to you for advice as to the proper kind. The orchard is on the western slope of the Sierras, the soil is of the red variety common to that territory and I have not used any water on the pears. Neither have I irrigated the apples last year, but did the year before. Water is available in abundance, but is it not best to raise them with cultivation if possible? Thus far both apples and pears look well, but feel that I should fertilize. Before planting, the holes were well blasted. The elevation is 2,200 feet.—PLANTER, Oroville.

We can only give general hints without having seen the trees, slope, etc. If the trees made enough wood growth and had good-sized and colored leaves, it is a question whether fertilizing would be any advantage at this stage of their growth. It is the same way with irrigation: if one gets good growth on a young tree neither irrigation nor fertilization is necessary but both may be very necessary later and probably it will be more useful to take to irrigating first, because in a shortage of moisture fertilizing must be ineffective. However, if there is stable or corral manure available we would get it and top-spread it in advance of the rains and turn it in with the green stuff whenever it is right to plow on that land. This will not only increase the plant food but will make the cultivation easier and better and prepare the way for profitable use of commercial fertilizers later.

Leaf-Spot on Alfalfa.

To the Editor: I have about 2 acres of alfalfa and of late I have noticed black spots on the leaves. After some time the leaves start to turn brown and dry. What is it, and what is there to do for it?—A. J., Soquel.

The disease is popularly known as "leaf-spot" and is caused by a fungus. It is not widely seen nor does it do much harm because conditions in California alfalfa regions favor the growth of the fungus. It is usually found on the older lower leaves and is negligible. If it should seriously invade the plant, cutting and burning to destroy the spores would probably be the only practicable fighting.

PAJARO DISTRICT APPLE CULTURE.

(Continued from page 297.)

trians) bought the crops in the trees, doing all picking and packing, and so relieving the growers of any necessity of worry over these details.

It was evident, however, that the growers did not receive as much for their fruit as the market conditions justified, so the time came when some were anxious to try other methods. This proved an opportunity for the commission packer. The first enterprises of this kind were started in Watsonville in 1902 and 1903. Many unfortunate circumstances attended this effort of the growers towards a better control of their product. Chief among these was the fact that the commission packer applied the methods which they had grown up under with such firms in other districts. Under such managements, the net returns were often unsatisfactory to the growers, but the disaffection had a good indirect effect, as it caused the Austrian buyers to raise their bids until a point was reached where the growers were getting a reasonable share of the profit.

I say a good indirect effect; but this must be qualified by other considerations. It never fails that easy returns are productions of lethargy, and having disposeu of all effort in the matter of marketing, the grower naturally sought to reduce the cost of maintaining the orchard, or at least, he was very loth to incur any additional expense, which the gradual change of conditions due to the steady increase of pests and diseases made imperative. When the crop is sold on the trees, the spraying is usually left to the buyer, the grower considering that the matter is no concern of his. The buyer, on the other hand, will naturally do only what is necessary to harvest his crop, and the future of the orchard does not worry him. It is easy to see that such a mutual shirking of responsibility must quickly lead to serious deterioration of the property, and unfortunately such has been the case in a number of the orchards. It must not be inferred from the foregoing that the conditions depicted are universal. Progressive growers who are endeavoring to improve conditions form an appreciable percentage of the whole number—and it has been through their efforts that the industry is still maintained.

Diseases Come.—The easy methods of culture which marked the early years of the industry began to be inadequate in the last decade of the 19th century, when the San Jose scale and codling moth obtained a foothold. Plant diseases, such as apple mildew and apple scab, also made their first appearance about that time. These pests required special means of control, largely the timely and thorough use of certain spray materials. At first there was neither the inclination nor the knowledge necessary properly to cope with the situation. It was at this time that Mr. C. H. Rodgers, a prominent and progressive grower, became county horticultural commissioner. Mr. Rodgers was chairman of the Board of County Horticultural Commissioners, which Board was organized by him, and served without compensation. He undertook to stimulate an interest and encourage the growers to maintain their orchards in good condition and prevent the industry from suffering an untimely decline. Two things appeared essential: first, to change the marketing methods; and second, to improve the cultural conditions.

In this paper, I will not further discuss the marketing methods, but will confine my remarks to the cultural conditions then existing and the changes which are taking place as a result of the work so started.

Experimental Investigations.—The first important step was taken when sufficient interest had been aroused to institute an investigation of the codling moth problem, the two counties included in the district sharing the expense with the Agricultural Experiment Station.

This investigation was started in the early spring of 1903, and continued as such for three years. The same work was then carried on by the counties without further financial aid from the University. Prior to the beginning of this investigation, little was known regarding the peculiar cultural conditions of this district and the extent of the industry was entirely unappreciated by outsiders.

Little Irrigation.—California is usually thought of as a land of irrigated cultures; but in the Pajaro district, apples and all other crops except berries are grown without artificial watering. These results are obtained with only a moderate amount of cultivation. The mild summer climate prevents excessive evaporation, and takes the place of the high altitude usually considered essential to the successful growth of apples as far south as Central California.

The soils of the district are quite varied in character, but generally well supplied with plant food elements.

These conditions account for the successful development of a considerable industry without the practice of intensive methods. The cost of production was quite low, certainly less than in other western districts.

Very little trouble has been experienced with frost, and as long as the trees remained healthy, full crops were the regular order of things.

Cultivation consisted then, as now, in one plowing during March or April, with one to four cultivatings, diskings, or like treatment, until excessive weed growth ceased.

Pruning.—A certain amount of pruning formed a part of the early practice; and in many cases, the methods then used are still in vogue. The pruning methods were prehaps the source of most of the present difficulties, for few of the growers had had experience in growing trees, and did not realize what the full grown orchard would look like. Too many main branches were left in almost all cases. This produced a congested condition of the tops which became evident by the time full bearing age was reached. The growers then attempted to remedy the trouble by removing several of the large branches—but serious results followed—as these big cuts failed to heal. Wood rot set in, and soon made its presence felt by serious deterioration of the trees. The life of many orchards has been shortened by this kind of pruning, and in some cases the trees have already died.

Aside from cutting out large main branches, the general pruning of the trees has consisted in some thinning out of smaller wood with the saw, the removal of suckers. Little or no tipping back of the young wood has been practiced.

This method of pruning produced trees with bushy tops, more or less umbrella form, with very little fruit wood inside on the main branches. The fruit is then born on the surface, and the production is proportional to the surface. With this system the largest trees are comparatively less efficient than those of smaller size, and the fruit being born in the extreme tips of the branches requires a maximum propping to support the load.

Thus it is evident that the expense of growing an orchard has not been great, especially when it is remembered that various crops have been raised on the land while the trees were young. Beets, beans, potatoes, corn, and berries were grown in the orchard for five to eight years after planting.

Another feature of the early plantings was a tendency to overcrowding the land. In some cases, the trees were less than 20 feet apart. This error was soon discovered, however, and most of the acreage is set 25 to 30 feet. Even this distance may be too close for the large growing bellflower on rich bottom land; and distances of 35 to 37 feet would have been better in several cases.

Pollination.—There has been a marker tendency to plant varieties in solid blocks, quite disregarding the matter of pollination. With the Newtown variety, this appears to have made little difference, but several large blocks of bellflowers show a tendency to shy bearing. In other cases, however, the same variety has produced well without cross pollination.

Self-fertility appears to depend on the condition of the trees, and when sufficiently vigorous, good crops are obtained, and recent experimental work has shown that it is possible to make unproductive blocks bear by methods of treatment which increase the vigor of the trees.

I believe that this discussion has given a fair outline of the cultural methods which have developed rather spontaneously along with the industry, and which methods have proved adequate so long as the trees remained healthy.

Fighting Diseases. — With the increase of pests and diseases, however, some additional treatment has become necessary, and also, a general revision of most of the old methods.

Spraying with arsenicals was commenced about 1900, and by 1906 the codling moth investigation had progressed to a point where efficient recommendations could be made. Since that time, the use of arsenicals has steadily increased until most of the acreage now receives at least one arsenical treatment.

Scale insects have also forced their attention on the growers; and winter spraying is now coming to be regarded as a part of the annual procedure.

Mildew.—The most serious enemy of the apple in this district is a fungus disease known as the apple mildew. This disease is characterized by its great persistence, appearing every year, and usually increasing rather than diminishing in abundance. This, and other factors have made it very difficult to control.

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The apple mildew problem has consumed much of the time of those connected with the experimental work conducted in this district, and a practical method of procedure has been slow in materializing.

It was found that this disease must be attacked both directly and indirectly. The direct methods of attack consist in the use of a suitable fungicide at the proper time or times. The indirect methods consist in such other spraying and cultural methods as will tend to promote better growth of the trees, so enabling them to outgrow the disease. It is apparent then that the apple mildew problem has a bearing on all the cultural methods involved, such as cultivation, irrigation, fertilization, pruning, and spraying. Of all these procedures, pruning is perhaps the most affected. The mildew first affected pruning by reducing the amount of new growth, and so decreasing the quantity of wood which it was apparently necessary to remove, according to the notions commonly prevailing. This condition became so aggravated that the pruners frequently left a big tree after having cut out only a small armful of brush. Much of these cuttings consisted of the so-called sucker which had grown up from the large limbs. As soon as the mildew was somewhat reduced by spraying, the trees made considerably more growth, resulting in a rapid increase of brush. This brush was only partly healthy, and contained many mildewed tips.

It became evident that such brush must be thinned out and the diseased portions removed in order to give the trees a chance to make a healthy growth. This has resulted in the development of a new system of pruning which is now being demonstrated in the experimental plots, and has also been put into practice by some growers.

Briefly, this system consists in tipping back all the small wood, and the removal of many small branches where the cuts will not be too large to heal over readily.

Mildewed tips are also removed, but the so-called suckers which the old method sought to eliminate are encouraged to grow, thereby producing fruit spurs on the main branches. It is necessary to tip back these suckers to keep them in reasonable bounds, and stimulate the developments of fruit buds. In this new pruning method, the shears has been largely substituted for the saw.

Sprays Stimulate Growth.—The mildew problem has also modified winter spraying methods; for while the disease may not be much reduced by the application of such sprays, it is possible to stimulate the trees and thereby promote better growth the following season.

Oil and soap sprays have been found to have such a stimulating effect, and since these materials are also excellent insecticides, their substitution for the more commonly used lime-sulphur solution has been recommended. A number of growers have now used crude oil emulsion for two years and are well pleased with the results. Recently another type of winter spraying has developed, which is likely to become quite general. I refer to spraying with strong solutions of nitrate of soda and lye or similar salts. The stimulating effects of such applications are even more marked than those of oils and soaps with a corresponding improvement in the condition of the trees, and greater ease of mildew control. It has been a surprise to many that spraying with fertilizers should prove more efficient than the ground applications, but such is the case.

These developments necessarily lead to a consideration of the problem of soil management. The growth of cover crops aided by irrigation will doubtless soon figure in the new cultural methods. At the present time, the only cover crops plowed under are those which grow naturally during the winter. When conditions are favorable, this winter growth may be quite heavy, but the vigor of the weed growth is gradually declining, probably due to the depletion of available nitrogen. Fertilizing with stable manure or winter spraying with nitrates restores the vigor of the weak growth, indicating that cover cropping with legumes will prove beneficial.

APRICOT SHOT-HOLE DISEASE.

To the Editor: It seems that apricot orchards not sprayed during the past season were just as free from shot-hole fungus as orchards that were sprayed. Is there a law making spraying compulsory?—W. G. S., Hemet.

There is no state law compelling anyone to spray although such laws would be highly desirable and must come before certain diseases can be adequately controlled. But as you may have noted in our Review columns last week, apricot shot-hole fungus is not a fungus at all so far as may be determined, though shot-hole of cherry, plum, etc., is known to be due to fungus. W. S. Ballard of the U. S. D. A. made a special study of this disease and reported at the State Fruit Growers' Convention that he was unable to find any organism responsible. In one experiment, he sprayed with Bordeaux in the fall, again when the buds swelled, again when the trees were in full bloom, and four times in the following month or five weeks. Thick coats of spray stuck on some of the fruits, but the "scabs" developed seriously under that.

They do not develop under the calyx which often sticks to the fruit a long time. In fact one spot observed developed 3-4 of a circle beside a calyx with 1-4 of the circle under a corner of the calyx healthy. Bordeaux the fungicide made no impression on it, but shade did, as is also shown by the fact that on fruit it always develops on the side exposed to the sun.

An apricot grower also reported that he did all sorts of spraying in vain on four acres, for half of the fruit was spotted. This year he was unable to spray and had clean fruit. It was suggested that spray aggravated the injury by penetrating the spots as they developed. One of this man's neighbors this year sprayed once with crude oil and four times with Bordeaux and had 50 per cent of the fruit spotted. A man from the apricot regions of Turkestan reported that they have quit spraying altogether, thinking spray hurts fruit there more than all pests. Prof. R. E. Smith observed a corner of one orchard which was sprayed with Bordeaux at exactly full bloom and that fruit was clean while the rest of the orchard was spotted. That was the only such instance he had ever observed.

But stimulation of the trees by 12 per cent crude oil spraying at Watsonville was reported as leaving the orchard specially immune, and Mr. Ballard suggested that as the best known preventive. Though crude oil sprays are stimulating when applied in winter, he suggests that for shot-hole trouble it should be applied when the buds are beginning to open.—Editor.)

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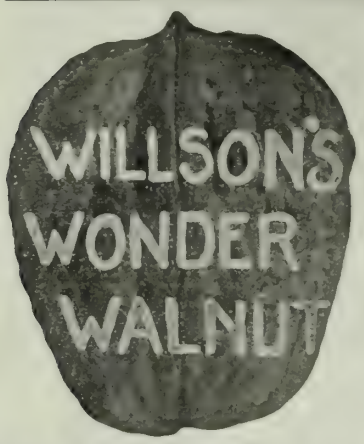

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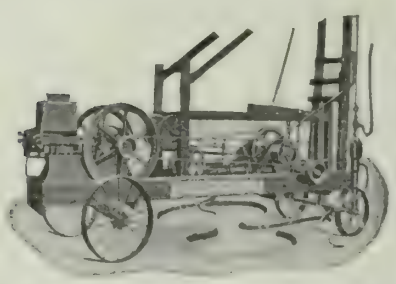

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How the Pea Aphis "Boards Around" and Grows.

(Continued from last week.)

Natural Enemies.—From 5 to 10 per cent of the aphides are normally destroyed by little wasp-flies of the genus Aphidius, whose larvae live within the aphides. A number of the more common ladybird beetles, syrphus-flies, and lace winged flies, which commonly prey upon aphides, destroy large numbers of the pests, but their work comes so late in the season that the peas are seriously injured long before the aphides are checked by them, though they might prevent a reappearance the next year.

The most important enemy of the pea-aphis is a fungus disease (Empusa aphidis) which is undoubtedly the principal factor in its natural control. The most probable explanation of the remarkable outbreak of the pea-aphis in 1899 and 1900 seems to be that, due to two exceptionally dry springs, the fungus was unable to develop, as it propagates best in damp weather, and the aphides increased unchecked.

Though occasional individual aphides were found killed by the fungus early in the season, not until June 11, 1900, were diseased aphides found in any quantity, but after that so swiftly did the disease destroy them that a week later but few aphides were to be found and almost all were diseased. Probably this fungus usually destroys the aphides on clover before they have become excessively numerous or have migrated to peas.

Control.—Inasmuch as the aphides spread from peas to clover, the latter crop should not be planted near peas when avoidable. In the spring the aphides should be carefully observed on the clover and if they become excessively abundant the only way to prevent their migration to peas is to plow under the clover deeply and roll the field.

Highly fertilized land in which the moisture is retained by frequent cultivation very often enables a crop to mature in spite of moderate injury. Peas sown broadcast or planted in 8-inch drills have been much more seriously injured than those planted in rows 18 to 30 inches apart and cultivated, and those planted close together afford no opportunity for brushing or cultivating as described below.

Early varieties of peas have practically escaped injury where late varieties have been wholly destroyed, so that it is obvious that only the earliest varieties should be grown where injury is anticipated.

Early in 1900 Professor W. G. Johnson found, when pease were planted in rows, that the aphides could be readily knocked from the vines by means of brushing with a branch, and that by following the brushes with cultivators, the aphides would be covered with earth and destroyed, either by suffocation or by the heat of the soil. Where the air temperature is 95 degrees F. the soil will be nearly 120 degrees, and aphides brushed onto it will be actually roasted to death in a few minutes. The cultivation should not be repeated for about three days, as it requires about that time for the destruction of the insects covered with earth, if it is not hot enough to kill them at once. By this method large areas of peas have been saved from destruction, but it was found that where the soil was moist it would form small clods after cultivation and that the aphides would merely crawl out from under them.

Though the above methods will destroy quantities of the aphides and thus prevent the destruction of the crop, they do not dislodge the young aphides in the terminals, and therefore cannot be relied upon to prevent all injury. Practical field tests have shown that this may be done by spraying with whale-oil soap, 1 pound to 6 gallons of water. In small gardens this may be applied by means of bucket or knapsack pumps, and on small acreages with a barrel sprayer with a row-spraying attachment having nozzles arranged so that the vines will be thoroughly covered from each side. The spray must be applied with considerable pressure so as to force it into the terminals. For large fields a New Jersey grower devised a traction sprayer covering three rows which applied the material at a cost of $2.50 an acre for labor and materials. To be effective spraying should be commenced as soon as aphides are found generally distributed over the plants. Kerosene Emulsion may be used on a small scale, if carefully made, but more or less injury has resulted where it has been used extensively. Probably many of the tobacco preparations now on the market would effectively destroy the aphides and would not injure the vines.

In California.—The pea aphis has other times for doing things in California than it has in wintry climates for which Prof. Sanderson is writing. The reader can, however, neglect mention of months and pay attention to the condition of growth of the pea plant and keep track of the paces of the aphis in that way. Prof. Sanderson's book named above is published by John Wiley & Sons at $3 per copy and can be secured from the Rural Press office at the publisher's price. The quotation we have given affords a good example of the clearness and pertinency of the information which the book furnishes, and at the same time will give the grower of peas a better understanding of this pest than he has hitherto had.

PRUNE PRUNING TIME.

To the Editor: Is it time now to prune prunes?—W. H. S., San Jose.

(It is now so late that by the time enough moisture falls to start new growth, the temperature will be low enough to prevent it, so that it is perfectly safe and there are many advantages. The land is good to work on, hauling out the brush won't puddle and pack the soil, the weather is good, you can see all dead wood easily, and whatever energy of the tree is put forth, will be used in strengthening fruit buds. It enables you to get ahead of your work so you may spray at the most convenient times, if that is necessary for scale or brown rot.—Editor.)

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PROCESSING PRUNES.

A prune packer of San Jose recently called attention to the impression that prunes gain much weight in processing. To test this out, he cleaned a dipper and put in exactly 100 pounds of 40-50 prunes as they came from the ranch. They came out weighing 103¼ pounds and were packed in two 50-pound boxes whose net weight ready to ship was 102¼ pounds. They had shrunk 1 pound in cooling. Skinny prunes gain more weight than the larger sizes by this dipping.

He says that practically all packers now dip in pure hot water at 210 degrees for 2 to 4 minutes to partially dissolve juice enough to seal the pores of the skin. Some add salt to the water. Many used to add logwood, licorice, glucose or glycerine to make the prunes shiny, but the logwood is poison and there never was any justification for its use, and there is no need for the others because the public does not demand a shiny pprune now. When properly dipped in hot water and packed at once while hot and soft, a bloom comes back on them as they cool and harden.

The dipping serves three purposes: it washes dust from the prunes, kills whatever insects may be in them, though it does not kill worm eggs, and softens them so they may be attractively packed. More prunes are spoiled by processing in water not hot enough, than in any other way.

HUMUS BULLETIN.

The receipt of a scientific bulletin of the University of California concerning the amount of humus in the soils of the State is very timely, for cover crops may be sown from that time on, and farm manure will soon be applied by those who will make the most from their crops, especially deciduous and citrus fruits, next year. One table shows that 1-33 of fresh cow manure may under favorable conditions become humus, 6.16 per cent of which will be nitrogen ready for bacteria to liberate into available plant food. Green clover reduces 25 to 1 containing 8.24 per cent nitrogen; meat scraps 11 to 1 containing 10.96 per cent nitrogen, oat straw 6 to 1 containing 2½ per cent.

Humus is found as much as 10 feet below the surface, but this differs in the various sections of the State. Three hundred and thirty-one representative California surface soils were accurately analyzed for humus, showing tule lands and meadows richest with 3.62 per cent, coast range valleys 1.69 per cent, Sierra foothills 1.23 per cent, Sacramento valley 1.14 per cent, southern California .94 per cent, San Joaquin valley .79 per cent, desert plains and lava beds .51 per cent; a general State average aside from tule and meadow lands of 1.15 per cent—not enough. Those sections which appear low in humus can increase it by the methods now in use by the more progressive of their farmers.

BARREN FIG TREES.

To the Editor: There is a large fig orchard here that fails to bear. they are the white figs. Do you think they need fertilizing, and, if so, what would be the best way to do this?—W. J. C., Sacramento.

(There is some confusion about the word "fertilizing." Do you mean manuring the trees or pollinating the blossoms? It is generally the latter meaning when we speak of "fertilizing the fig." If the young figs appear and fall off it is the pre- by growing the wild fig near by. If no figs appear at all this association would do no good. It would then be the old question of the "barren fig tree" which has bothered mankind for several thousand years. The best cure for that is to graft over the trees with scions from some other trees which do bear profitable crops in the same locality.—Editor.)

SUBSOILING IN ORCHARD.

To the Editor: I am thinking of doing some subsoiling and want a little advice. The trees are 26 feet apart and I would not go closer to the row than 8 feet. I plan to put three furrows from 16 to 20 inches deep down between the rows of trees. The ground has been irrigated for the last 10 or 12 years and when you get down seven or eight inches it is very hard. The trees look well. Do you suppose it would injure the trees to run those furrows so deep and cutting the roots? — J. B. B., Winters.

We should anticipate benefit rather than injury. You can, however, open a way for rainfall to the lower soil about as well with two deep furrows as with three and this would enable you to begin your experiment by keeping 10 feet away from the tree row. If you wish to be still more cautious run the furrows one way this year and the other way next year. Start in anyway, and be bold or cautious according to the amount of root cutting you find yourself doing.

STRAWBERRY CROWN MOTH.

To the Editor: Several strawberry beds in this neighborhood contain three or four varieties that have unaccountably died. There are apparently no insects at work on them. They have been well watered.—H. A. H., Elsinore.

To the Editor: A white worm with a pointed black head is boring into the crowns of my strawberry plants and they die.—R. H. B., San Francisco.

(The latter querist has the larva of strawberry crown moth, for which there is no satisfactory treatment on a large scale except submerging them in water until the worms are drowned or suffocated for lack of fresh air in their burrows. That ought to happen in about three days and would probably not injure the plants at this season. On a small patch, where you can treat individual plants, dip a piece of cotton in carbon bisulphide and push it down close to the roots. Cover it well with moist dirt and the fumes will kill the worms. The first querist may find the same trouble by cutting open the crowns of dying plants. —Editor.)

BARLEY, 82½ BUSHELS.

A small field at the University Farm at Davis has borne heavy crops of barley as indicated in the legend under the picture. In the fall of 1911, the west half was manured lightly with barnyard manure, then plowed and summer fallowed in 1912. It was sown in December, and in 1913 produced at the rate of 76.8 bushels per acre.

In November, 1913, the land was plowed nine inches deep, and harrowed both ways. It was sown on December 5 to Beldi barley, ninety pounds per acre being used. The barley was harrowed March 6 to break the crust caused by rain. The grain was harvested on June 1. Part of this was cut for hay, yielding three tons per acre. The part cut for barley, yielded 82.5 bushels per acre.

IRRIGATION ACTIVITIES.

While Placer county water users are making a fight for reduction of rates on ditch water to a price nearer that of their neighbors, and Fair Oaks is attempting to form a district to take over their system, Chico is laying plans to store flood waters of four creeks and rivers so they may irrigate that section which usually raises good crops without irrigation. Imperial Valiley is hoping, with good reason, for a $200,000 appropriation by Congress for Colorado River flood control, an appropriation which would have a better chance if they should hold the irrigation system under district control. Promoters of the plains west of Tulare Lake, encouraged by the water flow from the shallow wells of that region, and from the very few deep wells, are planning a company to drill for artesian water and to build reservoirs for storage to supply an immense and fertile acreage which now produces crops only in wet seasons.

The Modesto irrigation district is spending $55,000 on a concrete flume 720 feet long, at Gasburg.

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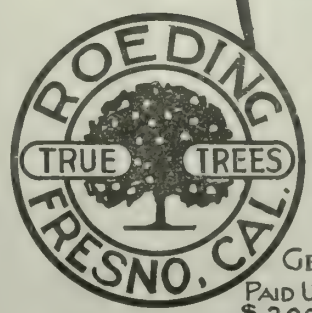

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Fighting Citrus Scale Pests

[Written for the PACIFIC RURAL PRESS by J. E. Adamson, Pomona.]

It would seem that the fruit growers of California have an endless problem to face in the attempt to keep their trees free from injurious pests of various kinds. The ordinary grower's work in the upkeep of the trees has led him to the study of methods of efficiency in the art of cultivation, irrigation, and fertiliaztion, and in some cases even the marketing. But if he has not made any special study of tree pests and diseases he comes to the conclusion that the name of these pests is legion. He fumigates for the black scale and sits back secure in the delusion that he has that enemy well in hand, when the red, purple, gray or yellow scale is pushed into the limelight; the latest to claim attention is the longelus and the end is not yet. Many growers wonder whether the time will ever come when the trees will be clean to stay clean, and there will no more be heard the call of the fumigator or the spray man or the persistent inspector with his recommendation to clean up.

As long as there are growers who will not clean up the trees of their own accord, and fumigators who allow tents to be used after holes are torn or burnt in them or the dozen and one other ways in which scale pests are fostered, there will be need for the eternal vigilance that is the price of safety.

Those of us who were in the fruit business during the white scale scare of twenty years ago and remember the fear with which the growers watched the spread of that insect remember also with what a feeling of relief we found that the report of its downfall at the hand of a natural enemy was true and that there need be no more fear for that particular scale.

We also have the partial failure of the scutilista which was to have made an end of the black scale but failed because his instinct or his lack of appetite led him to leave a few of the young scale to seed down the trees for another crop.

We still have hope that some natural enemy of the black scale will be found and introduced into our orchards to care for that most numerous of our scale pests and so leave our hands free for the fight against the other varieties.

The method of fighting scale pests by means of fumigating with cyanide gas has been far the best from the standpoint of making a good quick cleanup of the tree, but of course there is a time to be chosen in the life of the scale when the fumigation will do the best work, and a neglect of this element in the problem has many times brought failure.

There is no use of trying to kill scale before it is hatched, as any dose of gas that would reach the vitality of the unhatched eggs would do serious damage to the trees and fruit. Neither is it good to attempt a killing after the scale has reached the stage in its development called the rubber stage, when its shell has become tough and the edges sealed down to the surface of the bark.

There seems to be about three months in the early life of the black scale when it is easily reached by cyanide gas or other means of destroying it. There is one very serious disturbing factor in the fight that is being waged against this pest, viz., the tendency to hatch at irregular times so that the entire orchard or even the entire tree will not have the scale in the same state of susceptibility to the insecticide; and it it almost impossible to get a good kill.

This condition seems to be on the increase and will have to be met in some manner to reach the young scale which appear in the early summer and are too old to kill at the time the larger brood comes out in the fall.

As for the best time to reach the fall hatch, it will vary a little in different locations so that some will be ready by September 1st, but that date will generally be found too early.

Some of the best work is done between October 1st and the latter part of December, the principal objection to the later dates being that as frosty nights come on there is danger of damage to the trees from gas burns which take place very readily after the temperature falls below 32.

Some are advising the use of spray as a cure for this offhatch of the black scale, urging the fact that the spray will at the same time get rid of the various fungi which infest the trees.

The point at which the sprays seem to fail in the fight against scale is that the only scale killed are those which come in direct contact with the spray, which means that the entire surface of the tree must be covered with spray. This is almost impossible to do where the trees are thick with leaves as are the citrus trees.

That the spray will rid the trees of injurious fungi seems to be a fact and should be a welcome element in the problem of tree life, as it would seem that the various fungi cut a considerable figure in the health and productiveness of the citrus and other trees.

The red and purple scale have not been a big factor in our own particular district as they have in some others, for the reason that they were found before they had time to sread and followed up with a firm hand and got under control. The trouble in the fight with these two scales was that they had no specified season for the production of the young, but were at all times in all stages of life. The young of these two scales are brought into the world differently from the young of the black scale in that they are born directly by the mother; not hatched from eggs as are the black.

It was found necessary to treat them to a much stronger dose of gas than is needed for the black scale; and the dose had to be repeated immediately to kill the young which were born as the mother died and after the gas has been weakened below the killing strength. The strict application of these rules in the fight on red and purple scale seems to bring results, but at a money expense that would make the fight on black scale dwindle somewhat in the minds of the growers who now complain so bitterly at the expense of fighting that most numerous pest.

The fight on the longelus has been narrowed down to somewhat harder conditions than either of the other cases we have named.

After repeated efforts on the part of those interested, it has been found that only for the short period of six weeks beginning about August 1st, can this scale be successfully killed with either gas or spray, so the infected orchards have been quite generally fumigated this season with good results so far as can be seen both in destruction of longelus and

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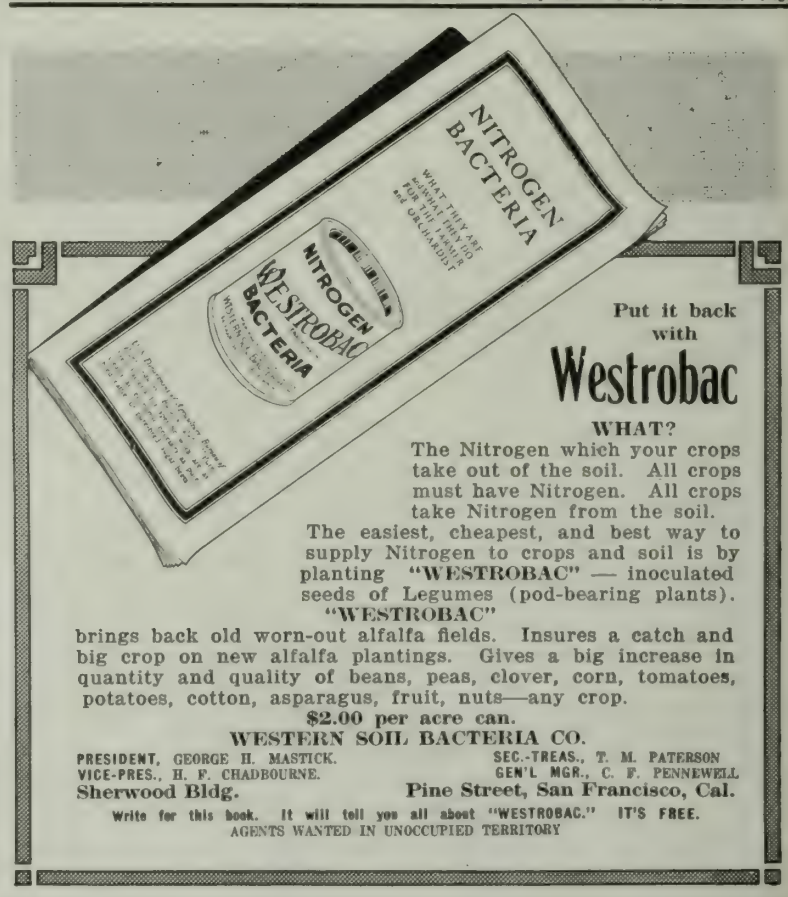

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also in cleaning up much of the off-hatch of the black scale.

One factor in the problem that has had a good deal to do with the apparent failure to do efficient work in the elimination of scale is the irregular order in which the work is done in acreage that is in direct contact. Growers have as a general rule looked upon the necessity for fumigation as an imposition and have done all possible to avoid it, with the result that one plot of land will be fumigated one year and the next one to it not until the next year and this out-of-order condition continues indefinitely. This keeps the various districts in the state of siege all the time as scale is distributed from one place to another very easily in the early stages of its life.

It is astonishing what a deterrent effect even an ordinary road has in the distribution of scale, and one of the easiest things in the world would be to arrange the fumigation periods so that all orchards in any block will be treated the same year. Of course as many blocks in a neighborhood should be done the same season as possible and the results will be still more wide spread.

So far as possible, the growers in a block should use the same outfit and demand that the work be carried on continuously from beginning to end in the block, and if several blocks are being done the work should be done as nearly as possible at the same time.

I have in mind an instance where three pieces in the same block and in direct contact in the rows were fumigated the same year, the work being started at the east end of the tract instead of the west or windward end. About two weeks later the same outfit was sent into the west piece, and after a lapse of four weeks more the middle piece was done. All this at a time when the scale was at the best stage of transportation and when the work could have been done vastly cheaper for the growers had it been carried on directly from one place to another.

There were those who hoped for better things when the growers took up the fumigation problem for themselves, but in most cases they were disappointed as the expense has been if anything increased and the quality of the work has not been improved. No doubt the growers' organizations should handle the problem for the growers' interest better than independent contractors who have no interest aside from the contract in hand and the possibility of another one in the future, while the grower has his interest in the final subjugation of the scale pest. These growers' problem should be handled as were the greater problems of marketing by the growers themselves from within; their organizations making the conditions govern the handling of the work and not allow the work to dominate the conditions to the extent that the work is poorly or insufficiently done. Sometimes men get into such a habit of method study that results are left out of account. We thought when we were so progressive as to provide ourselves with marked tents and stated schedules under the Woglum System that we had reached the pinnacle of perfection but the results have not justified the confidence.

The fault has not been with the Woglum System, but has been that we have paid attention only to the prescription and have neglected to pay attention to some of the other points of the case.

Growers should look on the inspector from the horticultural commissioner, as an advisor and friend who is trying to get the scale and other pests killed out, and not as one who is making every effort to get the grower to part with his money.

Above all the growers should cooperate to the end that the fumigation or spraying will be done in blocks as large as possible in any given year. In the effort to get into line some will no doubt have to give an extra treatment, but the odds are that the trees will do well by having the extra turn.

LEAF HOPPERS ON ALFALFA, ETC.

To the Editor: I am inclosing a number of small green gnats or flies that are destroying a small patch of alfalfa, cucumber vines and wonder berries. They are very numerous; when the stalks or vines are moved they fly up in hundreds. They don't eat the leaves, only suck, and the leaves turn yellow and drop. Is there any way to destroy them?—W. J. D., Beaumont.

(The insects are "leaf hoppers," not the species affecting grapevines, but insects of the same general characters and habits. There is probably no way to get these insects in this final stage of growth for the season except by going through the patch with something like the "hopper-doser" for grasshoppers, against which they can fly and get caught. Earlier in the season, before they get their wings, they can be killed by spraying the plants which they infest with kerosene or distillate emulsion, as advised for the grape-leaf hoppers in our issue of May 2, 1914. —Editor.)

PALMS.

To the Editor: I have some two-year-old Phoenix Canariensis, raised from seed, still standing in the nursery rows. How can I remove them from the seed bed and at what time in the season should they be reset? D. P., Fair Oaks.

If they are spaced so that you can get a ball of earth with each one, go to work with a sharp spade cutting away the soil so as to leave a ball about ten or twelve inches in diameter, enclosing the roots, then cut under the ball and lift out. If the soil holds together well, this is easily done. If it is inclined to fall apart, wrap with a piece of burlap before cutting-under. Do this any time during the next three months —according as you have water to deeply wet down the soil where you wish to plant, and keep it fairly moist afterward, or whether you have to wait for rainfall. If more convenient, you can move later in the winter or spring—avoidng times when the ground is full of cold water. If the plants are so close that you have to pull apart and expose the roots, it is better to wait until the soil is well wet by the rains and the air less dry—say in November. We have named months for the sake of being rather definite. As a fact such plants are quite easy to transplant at any time if the work is skillfully done and the moisture conditions kept right.

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Agricultural Review

California's State Fair has come to be looked upon as the annual agricultural festival, and the one just closed, while not so representative in some respects as former fairs, may be said to have satisfied most of those attending.

County Exhibits. — The building and annex set aside for the county and horticulture exhibits, while not well filled with such exhibits, contained many striking and effective booths from the following counties: Colusa, Placer, Fresno, Butte, Santa Clara, Sacramento, Alameda, San Diego, Imperial and San Bernardino. Placer county was awarded first prize, having a very attractive booth.

A novel feature was introduced by Butte county in the way of rice growing. To those unacquainted with this comparatively new cereal, the exhibit was highly educational as it showed in a clear way rice-growing in the head, with a miniature irrigation system exactly like those used in field use.

The only nursery company to take advantage of the fair for exhibition purposes was the Silva-Bergtholdt Co. of Newcastle. This firm made a unique showing of young deciduous trees, as they are taken from the nursery row, their exhibit receiving much warranted praise.

The fact that a number of counties are reserving their available funds for the Panama-Pacific Exposition next year directly affected the State Fair this year and made a less representative show.

Mechanical Power. — There has never been a finer display of tractors in the State than the one shown this year, and the fact that a majority of the visitors knew nothing about it shows neglect of adequate signboards showing its location. The tractor field itself was plenty large enough to allow complete demonstration work, but being tucked away off by itself necessitated close scrutiny on the part of the visitor in finding the entrance, through a mass of automobiles and old horse barns.

Those exhibiting were as follows: Holt Mfg. Co., Yuba Construction Co., C. L. Best, Diamond Match Co., Samson Iron Works, and Austin Drainage Co. The Holt people had a feature exhibit of a tractor climbing a board incline with a 45 per cent grade which attracted much merited attention. This company also showed for the first time their new "Infant" caterpillar and self-propelled harvester.

The new track layer machine put out by the C. L. Best Company, as well as the creeping grip tractor shown by the Diamond Match Co., were carefully watched by intending purchasers. The Schmeiser exhibit of giant scrapers and other machinery manufactured by that company demonstrated the progress which has been made by them in improving such kinds of machinery.

As stated last week the exhibit of pumping machinery was not nearly so large as those of last year, and a large part of the building set aside for that purpose was unoccupied.

Dairy Machinery.—The dairy machinery houses were out in goodly numbers and the attractiveness of this year's fair in this respect was superior to any previous exhibits.

The leading features in this class of exhibitors were the stave silos exhibited by the DeLaval Dairy Supply Co. and the Redwood Manufacturing Co., the milking machine demonstrations by the Sharples Milking Machine Co. and the Hinman milking machine exhibit by C. F. Daniels & Sons. The crowds which daily visited the latter demonstrations were large and showed that the mechanical milker is growing in popular favor.

The chief exhibitors of this class of machinery were The De Laval Co., The Sharples Co., Baker and Hamilton, Empire Cream Separator Co. and C. F. Daniels and Son.

There is a Walnut Crop in France estimated Aug. 15 at 15,600 tons, but the latest advices to the Cal. Walnut Growers' Ass'n before our going to press indicate that none of it will be available for export till the end of the war. A disjointed cable service says now that they are not embargoed, and again that they are; but if they weren't, there are not labor and railroad facilities and boats available to ship it away. Since opening prices on the new crop are due Sept. 24 and since the California crop is to total nearly 10,000 tons, an embargo in France could affect prices very markedly and move the crop quickly. In any event, however, since "the light California crop continues to show excellent quality," the growers' prospects are bright as shown by the following figures furnished by the Association for the year ending June 30, 1912: Total imports to the U. S. that year were 18,500 tons. U. S. consumed in the same period 31,000 tons. If the entire foreign supply this year is dumped on American markets, that plus the California crop will be less than the consumption in the year referred to.

A co-operative **flower and fruit exhibit** and market to be held in the Greek Theater at Berkeley Oct. 16 and 17 is to be held primarily to educate the entire student body of the Agricultural College in the co-operation which is doing so much for California farmers, and secondarily to help the Boys' Agricultural Clubs of the State.

Alternate tiers of the concrete seats are to be used for the display; the whole theater will be decorated elaborately by students of the departments of forestry, floriculture, and landscape gardening.

The student body hopes to obtain the necessary fruit and flowers from commercial and co-operative societies and from the fifty boys' clubs of the State as well as from all friends of the idea who are willing to donate exhibits for the cause. All such exhibits should be shipped at once to the National Ice and Cold Storage Co. of Oakland. Each county's exhibits will be shown separately.

Proceeds from the small admission fee and the sale of the exhibits will be turned into the fund used for encouragement of Boys' Agricultural Clubs in Cal. Thirty communities will send all boys' club members to the "Mart" on October 17, and the winner of the contest prizes in each club will start that afternoon for a four weeks' trip to Washington, D. C. and en route.

How the University grew the heavy barley crops noted in other columns of this issue is one of a multitude of valuable things that may be learned at the Farmers' Short Courses to be held at Davis this year from Oct. 5 to Nov. 14.

How a piece of alfalfa yielded two cuttings totaling 3 1-3 tons per acre five months after seeding will be taught. The short course in agriculture will include lectures on all phases of farming and practice in many, emphasizing livestock.

In the dairy manufactures short course the students learn to do by doing, which is really a strong feature of all the studies. Other short courses are those in horticulture and poultry husbandry.

There are no entrance examinations—every Californian over 18 years old is eligible—there is no cost except books, clothes, board at $5 a week, room at $6 to $10 per month at the dormitories or in town, and a $2 registration fee.

Opening raisin prices were sent out for seeded and loose muscats last week with a notice that they would probably be advanced very shortly. Lack of Foreign imports of dried currants and raisins leave the markets open for those from Cal.

The Inland Water Ways Association of California meets the last three days of this week principally to discuss the Newlands-Broussard bill which appropriates $5,000,000 a year for ten years, principally for flood control of the Sacramento and San Joaquin rivers and all their tributaries, and the same amount for similar work on the Colorado river. Many nationally known speakers are discussing all the various water problems of irrigation districts, and the river sections.

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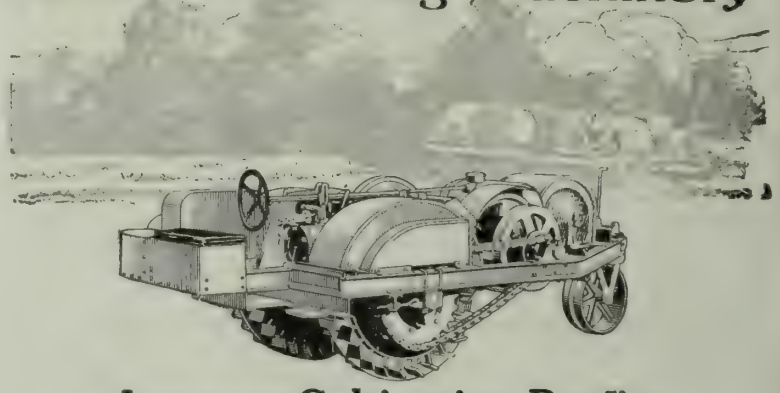

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California Vegetables in Garden and Field

By E. J. Wickson, A. M.

"California Vegetables" is handsomely printed, contains many cuts, has over 300 pages, and is bound in cloth. The contents cover every phase of vegetable growing, including farmers' gardens, California climate, vegetable soils, irrigation, drainage, cultivation, fertilization, protection, weeds, seed, growing, location and arrangement, planting season, propagation; also description and methods of handling all varieties of vegetables grown here.

Price $2.00 Postpaid Anywhere

PACIFIC RURAL PRESS
525 MARKET ST., SAN FRANCISCO
PUBLISHERS.

Olives in the Lindsay district have a heavy crop. Their regularity of bearing is attributed to lack of winds which would interfere with pollenation. What seems to us a better explanation is given by H. A. Huntington, citing the Smith orchard near Lake Elsinore, Riverside county. He says: "This season the olives here bloomed very heavily, but practically all of the blossoms dropped off and the general crop is light. Mr. Smith fertilized three sections of his orchard specially and finds that where the fertilizer was applied the bloom did not drop and he has a good crop, while in the unfertilized portion it is very light."

But Mr. Huntington makes another statement to which we take exception, claiming immunity from walnut blight and apricot shot-hole fungus. Since the apricot shot-hole fungus seems well proven to be no fungus at all, being a physiological matter of preventing entrance and affection, the district may be immune, due to its climate, but since walnut blight is caused by bacteria, which may live wherever walnuts grow, district immunity is simply a multiplication of the bacteria.

Dairy tuberculosis presents a discouraging problem. But a tuberculin test makes a good advertisement; and it is not so difficult to segregate suspected animals to avoid contagion.

Publisher's Department.

Very nearly 300 new subscribers were added to our paid list this week—the exact number being 293. The reason the Pacific Rural Press is growing so rapidly is because the information it publishes and the work it is doing is of practical value to agriculture in the west. Here is a quotation from a sample letter of which we receive a great many: "I think your paper is improving with every issue and should be in every farmer's hand. If it is read carefully he can get a great many good ideas, any one of which, if used, would pay for the subscription price many times over."—H. Taubner Goethe, Santa Clara Co.

Three new books that have just been issued by the Orange Judd Company, 315 Fourth Avenue, New York, have reached our desk.

"Farm Animals" by Thomas Forsyth Hunt, Dean of the California College of Agriculture, and Charles William Burkett, editor of American Agriculturist, is a handsomely illustrated volume of over 500 pages, bound in cloth and sells for $1.50 net. This book in its forty-eight chapters covers every kind of farm animal as well as fowl.

"Soil Management," by F. H. King, a well known agricultural author, is another of the new Orange Judd books. Perhaps no writer has had a better opportunity for wide experience in the handling of soils, and his 300 page book reflects this extended study. The book is well illustrated and bound in cloth. Price, $1.50, net.

The third new book received from the Orange Judd Company, is entitled "Rural Improvement," and is written by the veteran author, Frank A. Waugh. The book contains over 300 pages devoted to the principles of civic art applied to rural conditions, including village improvement and the betterment of the open country. Price, $1.25, net.

Low-Nozzle Traction Sprayer

THIS sprayer is only one in the large and complete line which we handle. It has 12 nozzles, covering 4 rows, and sprays the plants completely—top, underside and all sides—enveloping them in a dense fog. Will spray rows 28, 30, 33, or 36 inches apart.

Four nozzles spray the tops of rows and the 5 pipe extensions give 8 nozzles close to the ground—2 each on the inside pipes and 1 each on the outside pipes. Lower nozzles are adjustable.

WRITE FOR FULL DETAILS

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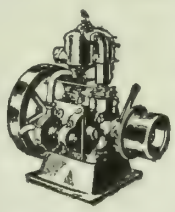

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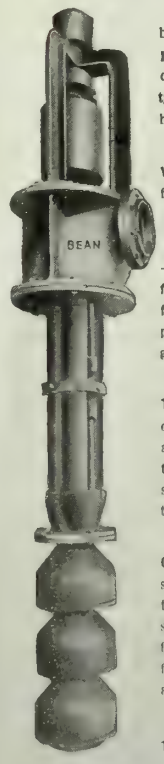
for all purposes. The 4-cycle, 4-H. P. only weighs 190 lbs. This is a no-trouble engine. Made in sizes from 4 to 25 H. P. Write for Catalog

THOMAS R. BROWNE, Stockton, Cal.

Bean Turbine Pump

For Deep Well Work



INSTALL a Bean Turbine Pump and your water problem is solved. It does the work when other types of pumps would be useless.

AUTOMATICALLY WATER BALANCED, a feature every pump owner will appreciate.

PLENTY OF BEARINGS—they are placed every five feet. This insures perfect alignment and makes possible highest speed and greatest efficiency.

LINE SHAFT IS CENTRAL TO PUMP—entirely outside of discharge pipes and never comes in contact with water. No sand or grit can get in the bearings.

THREE PIPE DISCHARGE—the pipes being simply and securely bound together. This means strength, yet sufficient flexibility to insure satisfactory work in wells that are not perfectly straight.

DIRECT CONNECTED TO MOTOR—if desired.

Send for further information if you're interested in deep well pumps.

Bean Spray Pump Company

211 WEST JULIAN ST., SAN JOSE, CAL.

OWENS VALLEY APPLES

That Owens Valley, Inyo County, recently opened up by the S. P. extension from Mojave, is a coming apple region is evidenced both by the heavy crop on the tree pictured here, and by the prizes won by the Owen's Valley Land Co. at the Watsonville Apple Show last year, which were: first premiums on Winesaps, Jonathan, Canada Red, Rome Beauty, Haas, Arkansas Black, R. I. Greening, and Keswick Codling; 2nd premium on Keswick Codling and White Winter Pearmain; gold medals for five-box and one-box lots of Keswick Codling. A number of these varieties are not extensively grown in California, but considerable credit is due experimenters who try out and discard unworthy varieties. Only in this way and by people of means, can profitable varieties for the various sections be determined. Since the county supervisors had not definitely decided at this writing to participate in this year's show, we can only say that such exhibition would be highly desirable.

Apple Tree in full bearing. Owens Valley, Inyo County. Apples reach a high degree of excellence in this Valley.

Mechanical Power on the Farm.

[Written for the PACIFIC RURAL PRESS.]

Farmers Supply Own Electricity.

Tulare county electricity users pay $50 per h. p. per year to be used for irrigation only—that is, unless they own "consumers' stock" in the co-operative Tulare County Power Co. In that case, they get electricity at a flat rate per h. p. year which just covers the actual cost. This was a saving of 8 per cent last year from the $50 rate which itself is the result of a reduction largely due to the co-operative competition with the private corporation which operates in those parts. But this 8 per cent saving is the least of the advantages of the co-operative electricity company. Under the private contracts, the farmer would buy enough horsepower to do his irrigating and often felt too poor to buy enough additional to supply the house and farm machinery.

Owners of consumers' stock in the Tulare County Power Co. may at any time turn the "juice" from the pump motor and use it for other purposes day and night. If they need some for other purposes while using the full h. p. on the pump, the "double throw switch" which connects the pump motor automatically connects a meter which registers the additional current. Under this system, in a land where wood is scarce, most of the consumers' stock owners have electric stoves for cooking and heating the house, electric flat irons, fans, and lights, motor-driven washing machines, etc.

Great as this advantage is, there is another which itself would justify the formation of the co-operative concern, even if electricity cost more: that is, the control of their own supply, a moral but very distinct advantage where so much complaint was made of arbitrary lack of accommodations.

There are three classes of stock, all held by over 450 electricity users and totaling over $575,000 already issued in $100 shares. The "preferred" stock, bought by those who had term contracts with the private corporation, pays 7 per cent dividends from the first profits from the commercial sale of electricity to people who do not own consumers' stock and for which $50 a h. p. year is charged. Only 25 per cent of the total capital stock may ever be preferred, thus keeping control out of the hands of mere investors.

"Common" stock draws whatever dividends may remain, and as time goes on, this is likely to decrease, so control by common-stock holders is out of the question.

It will decrease, because holders of both common and preferred stock are encouraged to convert it into consumers' stock as soon as their other contracts expire, thus getting electricity at cost and having the additional use of it.

Owners of consumers' stock receive no dividends except in decreased cost and increased use of electricity, of which they are entitled to only one h. p. per share; this makes it enough more desirable to insure the final object of converting all stock into that kind. All stock is in small holdings, the largest owner having 100 shares and none of course having any reason to own more than the number of h. p. needed on his own place.

Seven directors elected by the stockholders, at one vote per share, hold monthly business meetings at which stockholders are supposed and encouraged to be present to join in the discussions and give the directors their advice on pending questions. They do this quite generally.

The widely distributed ownership among actual users, and the encouragement for stock owners to have a hand in settling business questions, give to the company a public support which is a great aid in reducing costs and giving better service.

The company owns water rights, in Tule river, taking the water where the Mt. Whitney Power Co. turns it back and running it through a 5-mile flume to get a 500-foot head of water; but the expense of installing a plant there has prevented it so far. But they have sold provisionally 50,000 of the $400,000 bonds for permission to sell which, application is now before the Railway Commission. They expect to put in the plant with the bond-sale money.

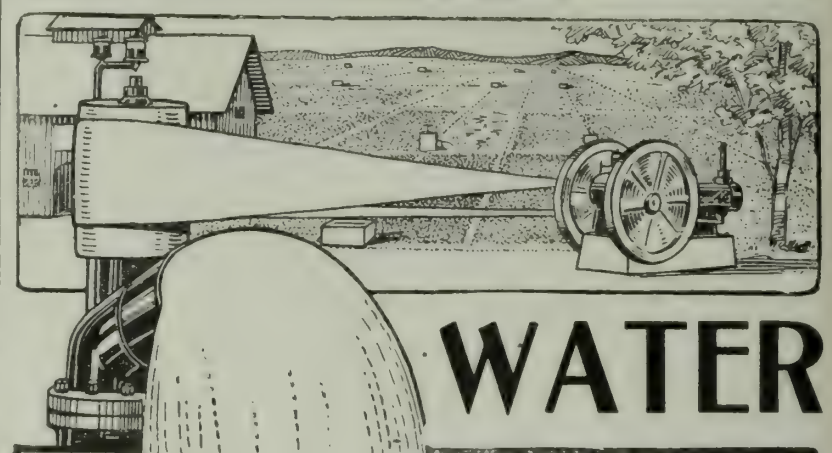
Their physical equipment now is modern new 2000 h. p. steam turbine plant at Tulare and a 1500 kilowatt dynamo unit, besides their lines, substations and offices. Another dynamo unit is soon to be installed with the proceeds of a sale of additional stock.

This steam plant furnishes all the electricity required in excess of the 1000 h. p. delivered under contract by the San Joaquin Power Co. at the Tulare County Power Co.'s substation at Strathmore. The other substation is 7 miles east of Pixley. The transformer at Tulare steps up the voltage from 2300 to 44,000 and the substations step it down to 11,000. The 44,000 volt line totals 40 miles; there are 375 miles besides, running from Tulare to Lindsay, to Exeter, to the citrus foothills and south through the alfalfa country to Earlimart and the Kern county line.

They are supplying 625 pumping plants which irrigate 30,000 acres. The motor h. p. connected is 4250. Not all of these are connected at once, but enough were at one time this summer to bring the highest peak load in their history to within 500 of their capacity. They want to keep this margin as installation of new motors proceeds, by adding to their source of power. Too narrow a margin is the cause of much dissatisfaction with other companies. The heaviest load came in July last year, but was higher than that in May, June and July of this.

The company which has such an iron-clad yet effective and attractive co-operative organization, and which has such success against the fierce opposition of vested interests, was organized only three years ago last October, largely as the creation of C. H. Holley of Lindsay, its present secretary and engineer.

A hard, expensive, stubborn fight to obtain county and city franchises delayed operations till April 17, 1912, when they delivered their first power. From that time they grew fast until July 1913, since which time growth has been steadily upward.



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The Most Popular Pump on the Market

The Layne & Bowler Pump

The extraordinary service and the perfect satisfaction this pump renders has resulted in its overwhelming popularity throughout the Great Southwest. Hundreds of western irrigators testify to the wonderful results the Layne & Bowler pump gives.

Water is produced at the very lowest cost.

Intricate mechanism and unnecessary parts are eliminated. No pit required. Compactly housed. Unaffected by sand. Built to pass inside of casing, 9⅝ to 30 inches. There is a Layne & Bowler Pump to meet your particular requirements.

Everyone interested in irrigation should have our illustrated Catalog No. 25. It tells all about this pump. Write for it today.

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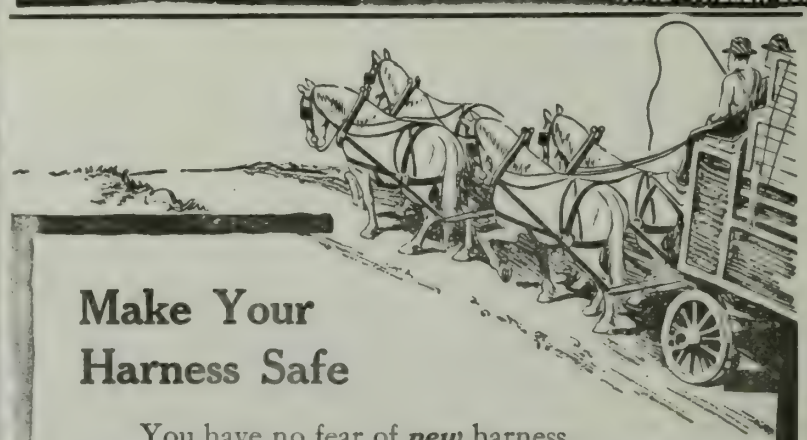
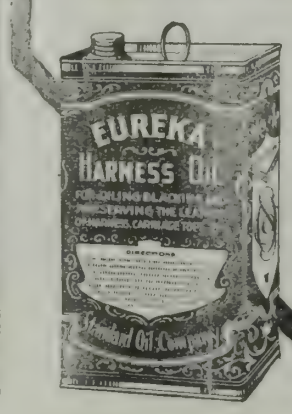
READ-MILLER CO.



Make Your Harness Safe

You have no fear of *new* harness breaking. You can place the same confidence in harness that has done long, hard service if you treat it occasionally with

EUREKA HARNESS OIL



That is because Eureka penetrates the leather, lubricates the fibre and keeps the harness soft, pliable and strong. Eureka puts new life into old, stiff harness. It keeps new harness young. It is poor economy to neglect your harness when it may be kept in good shape so easily. Ask your dealer for Eureka Harness Oil.

Standard Oil Company

(California)

Their net income from sale of power to parties not owning consumers' stock, was 6.8 per cent of the gross income the first six months of 1913. The net for the next six months was 11.3 per cent of the gross; while for the six months ending June 30, 1914, the net was $8,-145, or 11.8 per cent of the gross income. They expect to net over $12,-000 the current half year. This shows good management, public support, and decreased proportional costs as the horsepower used increases.

Their income tax, based on gross income, is a hardship here, because the large part of their gross income includes no profits, being the actual cost price of electricity delivered to their consumers'-stock holders.

SOME FARMING.

The following epitome of tractor farming in California is taken from the Chowchilla newspaper:

"The last of December last year W. C. Colley unloaded a new 75 horse power caterpillar engine and set of plows at the local station for plowing on Dairyland Farms and adjoining tracts. He began work on the second of January and to the second day of July had turned over 4700 acres of land on the Chowchilla and 2000 acres in the Fairmead colony. On the 3rd of July the plows were laid away and the engine hitched to a combined harvester and from then to the 13th of August, a little over 1200 acres of grain was cut for the small ranchers on the Chowchilla. The run both in plowing and harvesting was almost continuous, but little time having been lost waiting for repairs, and the work done was good. Mr. Colley will be at the plowing again in a few weeks and this fall expects to lease about a thousand acres of this land and put it into grain."

DIRECT CONNECTED PUMP.

A direct connected 25 h. p. opposed engine and No. 6 centrifugal pump were recently installed on the three-hundred acre ranch of the California Fruit Canners at Farmersville, near Visalia.

This outfit is producing 600 gallons a minute and has given perfect satisfaction since its installation. The speed of the engine can be easily and quickly adjusted to accommodate the water in the well, which insures an ample water supply against all heads. This direct connected plant is much more efficient than the belted type and effects a considerable saving in fuel as there is no loss of power between the engine and the pump.

Double suction pipes will be noted in the illustration, this outfit drawing from two wells. The pipes extending upwards are the engine exhausts. Distillate is used for fuel, and is carried in a tank between the engine and pump. On account of the rigidity of direct connected outfits of this kind, and their extreme lightness for their capacity, they are very popular for portable use. The double opposed construction of the Bean engine practically eliminates vibration, makes light construction possible without sacrifice of strength or durability, and affords that even steady power so important in pump work.

HAULING GRAPES BY TRUCK.

Delivery business for the Kirkman nurseries at Fresno became dull last August and H. L. Mullen, who drives their four-ton Kelly truck was sent to haul grapes from a ranch 15 miles out of town to the Fruit Growers' Association, making two round trips daily for three weeks. The machine is a 60 h. p. 4-ton truck, but Mr. Mullen usually loaded it with 300 boxes weiging about five tons. As one who rode a bicycle over those stiflingly hot, soft Fresno county oiled roads, we can vouch for the fact that the truck paid no attention to weather that put us in the shade several times one day. Fifteen gallons of gasoline and two quarts of oil were used daily. A performance worthy of notice was demonstrated when Mr. Mullin started the empty truck on the high gear on a level street without a jerk.

CAREFUL DRIVING.

"My automobile hasn't cost a cent in the two months I've had it, except for oil and gasoline and lights," said a friend of mine recently with pardonable pride considering that he had learned to operate the machine in that time and had used it over some rough hill roads.

If the auto driver is considered a fair mark for all kinds of charges for repairs, additional equipment, storage, insurance, etc., it is up to the average owner of such a machine to avoid the repair shop. My friend has done this by careful driving. Anybody can do that.

But here in San Francisco where, as a visitor to our office recently remarked, "there seems to be no speed laws," and as the arteries of the city converge at many points on Market street from five directions, one needs to be a specially careful driver.

One came up Broderick street the other day and tried to cross Geary. But another was coming down Geary at a barbarous speed. When collision seemed inevitable, he set the brakes and slid several rods. The other car in trying to avoid him, turned into a high tension electric pole and put the front axle out of commission.

Another car in another part of the city tried to avoid running down a small boy. He hit the boy and turned the machine turtle down a steep grade. Both collisionists went to the hospital.

A friend was driving down the streets of San Jose when a little girl shot out from between the machines that lined the sidewalk. Brakes and a quick turn saved her life, though she was mostly out of sight in front of the mudguard. Whose fault would it have been?

An auto load of men and women made a sharp turn at high speed near Sacramento and the front wheel couldn't stand the strain. It crumpled, the axle stuck into the road, the machine turned upside down out of the road. Two women were killed and the driver went through the wind shield, gouging one eye out, and slashing his head almost completely off. Whose fault was it?

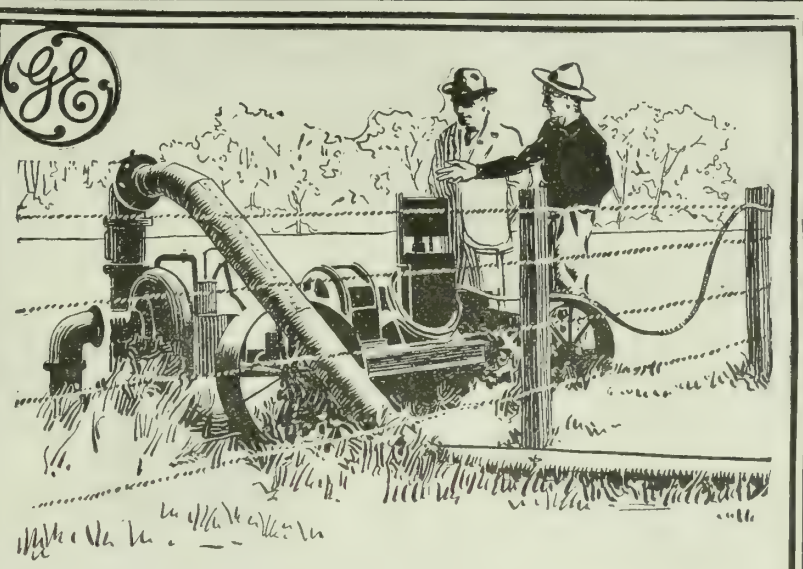
It's lots of fun to drive fast if you absolutely know that the machine is o.k. in all parts.

In opening a department which we hope will give more or less encouragement to our readers to use automobiles and farm power machinery, we hope that no loss of lives or property will result. Please drive carefully and don't diminish our Rural Press family.

Co-operation succeeds best on community grown crops.

Humus enables bacteria to live in soil and make unavailable fertilizer elements available.

A friend of the Press thinks farmers should look to agricultural papers for advice, rather than to farm advisors.



How One Ranchman Pumps Seven Wells with One Motor

This picture shows one application of the portable motor outfit on the Patterson Ranch at Newark, Cal. Mr. Patterson pumped from seven different wells last season—all under varying conditions of head, the motor having worked continuously without a moment's trouble.

This is one more example of the money-saving qualities of the

G-E ELECTRIC MOTOR For RANCH AND FARM

Once installed, the G-E Electric Motor requires the least attention of any power. Its upkeep is almost nothing. There is practically no expense for repairs or replacements. It will run for twenty-four hours a day without attention, and can be started a mile or more away from a switch in the house or barn.

Better, cheaper irrigation is made possible by the G-E Electric Motor, and its field for other uses is unlimited. One G-E Electric motor, mounted on a truck, can be used to run a rock-crusher, pump, concrete mixer, ensilage cutter, or for threshing, baling, grain crushing, etc.

In the house, electric power has proven itself woman's greatest help in churning, sewing, washing, and in many other ways.

Write today for interesting free booklets about ranching and farming with electricity.

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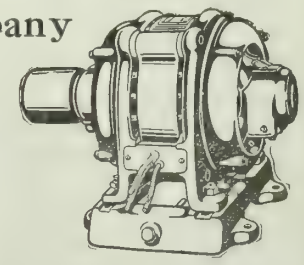

The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

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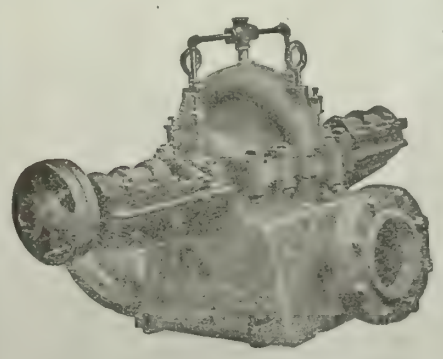
Are high efficiency pumps designed to operate continuously under various conditions.



Jackson Pumps mean quality—quality in materials, workmanship and design. You get quality that makes for lasting service—reliable service.

The Jackson Pump is the most efficient type of pump—because the Jackson Pump is made in special types to meet every service condition—because the Jackson Pump is made extra heavy and will last.

Let us give you figures on the operating cost, then make your comparisons.

Write for our catalog 47-B

Byron Jackson Iron Works

INCORPORATED

357-361 Market St., SAN FRANCISCO, CAL.

Los Angeles, 212 N. Los Angeles St. WORKS, West Berkeley, Cal.

With the Livestock Men

C. G. McFarland of Tulare reports the sale of the following Jersey cattle: Gertie's Son and a son of Gertie's Lad to Royal Waltz, of Hanford; cow Ideal's Rose of St. Lambert to W. E. Ward of Lancaster.

Bishop Bros. of San Ramon, Contra Costa county, report that they have found the demand for purebred Shropshire sheep greater than the supply this season and are thinking of importing a large number from the East in a short time. They say that the demand for ewes is exceptionally heavy and that they have been compelled to turn down a number of good sized orders for that class of stock. Many of their intending purchasers are smaller farmers who hope to establish purebred flocks.

The Stanford University sold a number of bulls and a few head of heifers while at the State Fair last week. Mr. Stearns, who is in charge of this herd, states that they are getting things shaped around at the ranch in such a way that they will soon be able to aid in supplying a large number of breeding animals annually, to the breeders of this State.

While attending the State Fair, N. H. Locke told the writer that as soon as he has completed this year's circuit, he expects to spend all of his time in officially testing his herd of Jersey cattle. Friends of Mr. Locke have continually urged him to take this step for a number of years and it is as good Jersey news as has been published for a long time in this State. Hereafter the show herds will be turned over to his son, who is a thorough cattle man; and while still a young man, it is thought that he will closely follow in his father's footsteps as a show man.

HORSEMEN PLAN AUCTION.

One of the most interesting meetings held during State Fair week at Sacramento was that of the Draft Horse Breeders' Ass'n on September 17, and from the enthusiasm shown it is evident that the founding of this association has met the approval of horse breeders generally.

Lowering of the annual dues from $5 to $1, and the holding of annual auction sales of purebred horses were discussed.

At the time of organizing last spring it was thought that $5 a year dues would be necessary in order to finance the work to be done, but it has been found that a larger membership and lower dues would meet with more popular favor among the smaller breeders; and as the purposes of the association were primarily to aid the smaller breeder the above change was unanimously adopted.

The question of working in connection with the State Board of Agriculture in regard to the classes at the State Fair was turned over to a committee especially appointed for that purpose.

Along with their aim of helping the horse industry of the State it was decided to hold a sale as before mentioned, at the University Farm at Davis, sometime during the coming winter.

It is thought that such a sale will greatly aid the small as well as the large horsemen as they will be able to find a more ready demand for any surplus stock that they may have on hand and on the other hand it is supposed that buyers will be given a better selection in this manner than if they visited the various parts of the State where such horses are raised.

While definite plans have not as yet been formulated it appears to a number of the members that nothing but absolutely sound stock will be sold or accepted, thus insuring all buyers a square deal.

Later issues of this paper will contain more definite information regarding plans for the sale and in the meantime any reader having either sound registered stallions or mares to dispose of should correspond with J. I. Thompson, Davis, Cal., who is secretary of the association.

With the low annual dues of $1 now in force every stallion owner in the State should send in his application for membership at once.

SWINE BREEDERS MEET.

The meeting of the California Swine Breeders' Association which was held at Sacramento during State Fair week was well attended by men interested in the raising of purebred swine in the State.

The main purpose of the meeting was to remedy existing conditions at the State Fair, the consensus of opinion at the meeting being that more attention should be paid to the fat barrow classes and an endeavor made to get away from the high fitting which has prevailed at the fair for so long a time, resulting in many of the finest breeders in the State being lost to the industry for breeding purposes.

Committees were appointed to confer with the directors of the State Agricultural Society to work out plans for the establishment of new classes and the working over of some of the classes already in existence.

Most of the improvement in the swine quarters this year was due to the work done by this association. With a large and ever growing membership the association should be able to do a lot of good in the future and it deserves the support of every farmer interested in the future welfare of the swine industry in the State.

FETERITA AS A STOCK FOOD.

To the Editor: Relative to nutritive quality, how does feterita compare to Kaffir and Egyptian corn? Can stalks and leaves be used as fodder for stock?—H. C. R., Patterson.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

Very little definite information is available as to the comparative feeding value of the different grain sorghums under California conditions, but as far as is known there is no appreciable difference between them in this respect. Feterita, or Sudan Durra, belongs to the same group of grain sorghums as Egyptian corn, or Brown Durra. It is one of the best grain crops of the non-saccharine sorghums and will outyield Kaffir in grain, but not as forage. It matures somewhat earlier than this crop. Fet-

BUY HOLSTEINS
at the
California Breeders' Consignment Sale
Hanford, October 28, 1914
100 HIGH CLASS ANIMALS 100
Tuberculin Tested
The names of these consignors insure quality:
R. F. Guerin, A. W. Morris & Sons, T. J. Gilkerson, G. A. Hewitt, and Jas. W. McAlister & Son
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REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

AYRSHIRES—For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

ROYAL JERSEY HERD—Offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers & Merchants' National Bank.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thorough-bred Holstein bulls for sale. Write for prices and pedigrees.

I NOW HAVE to offer a limited number of young Holstein bull calves. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

HAVE FOR SALE 35 head Holstein graded milk cows; will exchange for beef stock. Address H. S. Hopkins, Live Oak, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

THIRTY-FIVE head of good grade dairy cows for sale by Dr. A. Schapp, Esparto, Yolo Co., Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS—Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

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ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

REG. HOLSTEINS—Bull calves. Julian-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

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J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

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FOR SALE—Young Berkshire sows and boars from registered stock. Brae Bourne Ranch, Route 3, Box 69, Santa Rosa, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

BERKSHIRES—Utility and choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

YOUNG REGISTERED BERKSHIRES—Boars and sows. Reasonable prices. Enterprise Farm, F. C. Cuthill, Newark, Cal.

POLAND-CHINAS. Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

REGISTERED O. I. C. SWINE—Special sale of young sows. C. D. Conway, Lakeport, Cal.

DUROCS from first-prize winners State Fair, $15.00 up. Ed. E. Johnson, Turlock, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

MULEFOOT HOGS are best by any test. Jno. Dunlap, Box 416, Williamsport, Ohio.

REGISTERED DUROC JERSEYS—Bred sows and young stock for sale at all times. J. K. Frazier, Denair.

REGISTERED BERKSHIRES—Young stock for sale. F. A. White, Elk Grove, Cal.

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CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND CHINA HOGS—C. A. Stowe, Stockton, Cal.

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MISCELLANEOUS

FOR SALE—Two dapple greys, 5 years old, 1400 lbs. Fine team. 8 head of Shorthorn Durham bulls from 5 to 12 months old. Address, A. Gaul, R 5, Box 71, Stockton, Cal.

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PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa.—Registered Berkshire hogs and Jersey cattle.

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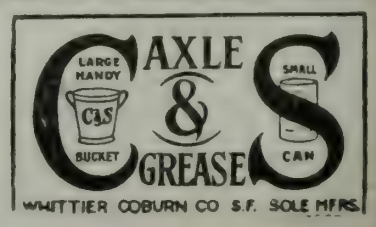

erita has only been grown in this state for a few years, and as in the case of most new things, extravagant claims are often made for it, but experience has shown that it does not differ greatly from the other grain sorghums in either yield or nutritive value.

A field cut for the silo at the University Farm last week yielded at the rate of about 8 tons to the acre; the grain was nearly ripe and the leaves largely wilted. A great deal of water was added as it went into the silo, so that it will doubtless make a good quality of silage and be a very valuable winter feed. This crop received one irrigation during the season, about Aug. 1.

The stalks and leaves of feterita, as of all the grain sorghums, can be used for fodder and are used extensively for this purpose in the central and western states. They have a similar composition and feeding value as Indian corn stalks and make a good roughage for cattle and other stock for fall and winter feeding. In feeding cattle and growing animals, it should be supplemented with grain feed, preferably a mixture of such as will supply a fair amount of flesh-forming substances (protein), like barley, wheat bran, and oilmeal or cottonseed meal, in the proportion of say 3:2:1; the exact amounts and proportions to be determined by the relative prices of the feeds and the kind of animals to be fed.

DRIED MOLASSES BEET PULP OR MILO MAIZE.

To the Editor: I would like to know whether it will pay me better to buy dried molasses beet pulp at $20 per ton delivered or to feed milo maize which I can sell for $30.00 to $32.50 a ton. I am now feeding my dairy cows alfalfa hay, but propose to add one of the above feeds.—Subscriber, San Francisco.

There is no question to my mind but that dried molasses beet pulp is much the cheaper feed of the two at the prices given and that your subscriber will do well to sell his milo maize and buy dried beet pulp. This is quoted at a very low figure, indeed, and is very likely as cheap feed as he can get to be fed supplementary to alfalfa hay. Molasses beet pulp appears to have a similar feeding value to corn or barley and even the latter feed might not be obtainable at this time at $20 a ton, delivered.

If there is not too much difference in the prices of barley and beet pulp, e. g., not over $4 or $5 a ton, I would suggest that he feed a mixture of the two concentrates, in the proportion of 1:1 or 1:2 by weight ,as the cows will be likely to relish and do better on such a mixture than on either feed alone.—F. W. Woll, University Farm, Davis.

RAISINS FOR LIVESTOCK.

To the Editor: Are muscat raisins properly cured good feed for laying hens, milch cows, and working horses? And are the fresh, ripe muscats good for the hens or the milch cows?—B. V., Merced.

(Muscat raisins properly cured seem an expensive livestock feed in any event. We know a poultryman of several thousand hens near Petaluma who claims that fresh fruit reduces egg laying. Probably raisins would not be of value because they are mostly sugar, which is not used in making eggs and not much in sustaining the hens. If you can get a cow to chew raisins they will probably be valuable, if expensive. The fresh grapes, being juicy, would make good cow feed. We know a Sonoma county prune grower who kept his horse fat on cull prunes and dried pears with a little hay and grass, so we think a raisin-eating horse would do very well. But introduction of any animal to the fruit diet should be gradual enough not to disturb its digestive processes seriously.—Editor)

SHADE AND SHELTER FOR CALVES.

[Written for the PACIFIC RURAL PRESS.]

Shade in the summer and shelter from the rains in the winter are quite as essential to the proper raising of good dairy calves as the other detail work around the dairy, which is commonly considered necessary; yet on a large percentage of dairies one finds little or no attention being paid to that part of the business.

Trees of some sort naturally make the most economical and in all ways the most satisfactory shade; and dairymen who are unable to secure such shade from trees already on the ranch should plant some of the more rapidly growing varieties. For most California locations the eucalyptus is perhaps best suited, as it grows rapidly and allows close planting.

A large dairyman in the San Joaquin valley is authority for the statement that his half acre planted to a grove of eucalyptus produces him more actual dollars in a year than any other half acre on the ranch.

Not only do such groves afford shade for the calves but they also make ideal places for the cows in hot weather; and provide stove wood for the family cook stove.

The greatest trouble in securing such groves is found where the stock is turned in, while the trees are still young; as the stock, both young and old, are pretty sure to damage the young trees if allowed access before they become large enough to withstand leaning and rubbing against.

In the absence of natural shade from trees, the next best thing is a shed roof, preferably built in such a way that the sun strikes in as little as possible. Such a shed or building may also answer the double purpose of a calf feeding building as well, and may be built at a very small expense.

A building of this kind was recently seen in Sonoma county that had been erected by the dairyman himself out of some left-over lumber from other buildings.

The building as seen was 8 feet wide and 14 feet long, being built with a shed roof. The front of the building faced the north, being 6½ feet high and entirely open, with the exception of the row of stanchions which extended from one end to the other. The roof sloped from the front to the back wall which was 4½ feet high, this and the east being enclosed with one by 12 inch boards set perpendicularly.

The west end was left open as an entrance way from the corral and the building covered with a shake roof. A trough made of one by 12 inch lumber ran along the entire front of the stanchions, about one and a half feet above the ground. This was partitioned off, making a small box-like manger just large enough to hold a milk bucket.

The ground floor was covered with a layer of gravel and graded in such a manner that any water from the outside would drain off well. This was covered with straw, the latter being replaced from time to time as needed.

In building, perhaps too many dairymen make the mistake of only putting up temporary buildings like the above one, putting off the erection of a better one from year to year. It would seem, therefore, that while the one mentioned was both cheap and practical, it would be better in the end to use only the plan outlined, and construct with better and more lasting material.

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As usual, vastly in the lead.

At the California State Fair STALLIONS IMPORTED BY US MADE A CLEAN SWEEP.

Prizes as follows:

4 year old—1st, **Krural**
3 year old and under 4—**1st, Lucon**
3 year old & under 4—2nd, **Londricitos**
2 year old and under 3—1st, **Major**
" " " " " "—3rd, **Mairan**
" " " " " "—4th, **Modal**
" " " " " "—5th, **Mars**
Grand Championship, Open class, **Lucon**
Grand Championship, State class, **Londricitos**
Reserve Champion, Open class, **Krural**

Also first prize for group of five stallions, any age.

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Live Stock at the State Fair.

[Written for the PACIFIC RURAL PRESS.]

Livestock was easily the outstanding feature at the State Fair this year and the prediction made earlier in these columns that it was to be an elimination contest for the big show in 1915 seemed to be pretty thoroughly demonstrated.

The judging of all livestock started on Monday with the Shorthorn cattle, which were, as we have previously reported, far superior in quantity and quality to the show of last year, even though the awarding of the championship ribbons was largely one sided.

In the Hereford classes the only contender was the Simon Newman Company, which naturally lessened interest in the show ring, and yet Manager Dunlap deserves a great deal of credit, for he had his string as well fitted as though he was entering the hottest kind of competition.

In the dairy cattle division the Holsteins came first, and to quote Prof. H. H. Killdee of the Iowa Agricultural College, who did the judging: "I was completely dumfounded to find such high quality in California." He further remarked that it was the best Holstein show, quality and quantity considered, that he had ever seen at a State Fair.

The grand champion bull of last year, Lorena Korndyke, was again given that honor, the competition, however, being keen between him and the bull, King of the Pontiacs 14th, shown by the Stanford University. But from a show ring standpoint the Morris bull stands out in a class by himself which is hard to equal.

The cow Inka Tritomia 2nd came again this year and won the grand championship, although for a while it was feared that she would be too sick to show to an advantage.

A factor which is becoming of greater importance each year is the proper fitting and showing of dairy cattle; and in this the Holstein breeders certainly did themselves proud, putting up a show that was pleasing to the eye and of high quality.

In the Jersey divisions a complete reversal of last year's experience happened, causing considerable wonderment on the part of the California breeders while the first few classes were being judged. The cause of the surprise was the introduction of the strictly Island type Jersey in competition with the American bred type. The former were shown by C. P. Hembree of Oregon. While this is considered the proper show ring type in many states, our California breeders have been confining their efforts to production lines extensively with the result that the fine lines of the imported stuff made our home bred animals look coarse to the eye in comparison.

Another thing shown was the fact that California Jersey breeders have neglected the proper fitting of their stock for the show ring. Along this line Prof. Killdee stated that a noticeable difference would have prevailed if our breeders had put the bloom on their stock that was evidenced in the Oregon herd. If the judging was characteristic of what may be expected at next year's show, the experience gained should be of great value to those breeders contemplating attending the 1915 Exposition. Jersey exhibitors outnumbered those of any other breed of cattle on the grounds, nine breeders coming from Stanislaus county alone.

The interest manifested in the Guernsey classes illustrates the progress made with that breed during the past year and both the quality and quantity was higher than ever before seen at a California show.

In commenting on this breed Prof. Killdee stated that there were individuals in the show which could win in any competition, not excepting the National at Chicago. He said that he has seen most of the Guernsey show herds of the East this year, but that there is nothing there which could win over some of our California owned stuff. Considering the comparative newness of this breed in this State he considered our breeders have done remarkable work.

In the draft horse division the Percheron classes were easily the feature. The quantity and the quality shown in this breed was a thing of envy, Judge J. F. Cain, of Utah, remarking that the winner in the aged stallion class was of International quality. The imported animals took off the bulk of the firsts in the open classes, the Bassett horse which stood fifth last year coming into first place in the State class this year in competition where quality ran high.

Belgians and Clydesdales were poorly represented; and while there was no competition in the Shire classes to speak of, the show put up by Henry Wheatley attracted a great deal of admiration. Where the Shires really came into their own was in the competition for the State Stallion Registration Board's prize on the best registered stallion and three of his get. Here the Shire stallion Severn Pilot, two fillies, and young stallion shown by McCormick Brothers of Rio Vista, were fine examples of what is possible for the California farmer to accomplish with good sound stallions. To quote Judge Cain, "California was not harmed when that stallion came across her borders." This is a feature of the horse show which should in every way be encouraged, for it directly interests the farmer in the raising of horses having all of the requirements of the heavy horse trade.

Tradition was almost completely upset in the swine division, new breeders having made remarkably large winnings in the Berkshire, Poland China, and Duroc Jersey classes. This would seem to indicate that the swine standards are being rapidly raised by both old and young breeders.

Judge E. A. Baxter, of Illinois, seemed to favor the animals which were heavy in flesh and the prevailing feeling among breeders seems to be that the barrow classes must become of greater importance, before any noticeable headway can be made in showing breeding animals in ordinary breeding condition. Two of the older and larger breeders filled out their herds largely with young animals; and this system is likely to be still further practiced unless the increased barrow classes are provided. The loss of litters through highly fitted breeding animals after the Fair demands some immediate steps for improvement along this line.

The awards for livestock other than Shorthorn cattle which have been previously made, are as follows:

Red Polled Cattle—R. R. Cartright, Angeles Camp. All entries and all awards.

Hereford Cattle—Simon Newman Cattle Co. All entries and all awards.

Holstein Friesian Cattle—Bulls three years and over: 1st Lorena Korndyke, A. W. Morris and Sons; 2nd, King of the Pontiacs 14th, Stanford University; 3rd, Genesee Lad, Stanford University. Bulls two years and under three: St. Segis Pontiac De Kol Burke, Morris and Sons, 2nd, Lad Wonder Pietertje De Kol, Dr. Ben Statson; 3rd, King Pontiac Korndyke Pontiac, Morris and Sons. Senior Yearling Bulls: 1st, Juliana De Kol King Segis, Morris & Sons; 2nd, Pure Gold Brookside Clothide, Markoffer and Latta; 3rd, Canary Prince of the West Johana, Stanford University. Junior yearling bulls: 1st, Spotland Canary of Vina, Stanford University; 2nd, Hartog, Colanthia Korndyke, James McGillivray; 3rd, Sir of the Canary Band, Stanford University. Senior bull calf: 1st, Prince Juliana Walker, Morris and Son; 2nd, Segis Creamcup Pontiac, Morris and Son; 3rd, California Fidessa Korndyke, University of California. Junior bull calf: 1st, King Clyde Korndyke, Morris and Son; 2nd, Sir Hengerveld Orlissa De Kol, Stanford University; 3rd, Sir Segis Pontiac Mead, Morris and Son. Cows, four years and over: 1st, Inka Tritomia, James McGillivray; 2nd, Aggie Acme of Riverside, Morris and Son; 3rd, Romeo Aggie Louise, McGillivray. Cows three years and under four: 1st, Leda Gerben Alcartra, Morris and Son; 2nd, Boweda, Stanford University; 3rd, Diotime Clyde Korndyke, Morris and Son. Cows two years and under tree: 1st, Jane Netherland Segis, Morris and Son; 2nd, Cobossie Korndyke Queen De Kol, Morris and Son; 3rd, Queen

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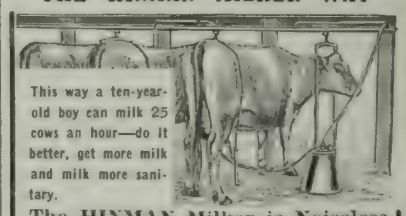
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Ram Lambs and Yearling Shorthorn Bulls for Sale

Segis Hengerveld of Norwood, Frank Hatch. Senior Yearling Heifers: 1st, Margaret Terpstra Korndyke, Morris and Son; 2nd, Inka Tritomia Maid, McGillivray; 3rd, Lady Hiske Walker, Morris and Son. Junior Yearling Heifers: 1st, Squaw Queen Johanna, Stanford University; 2nd, Princess Ledga Harteg Inka, Hatch; 3rd, Ethel Riverside Pontiac, Morris and Son. Senior Heifer Calves: 1st, Modesto Portia Korndyke, Morris and Son; 2nd, Dora Spofford Korndyke, Morris and Son; 3rd, Princess Autun Cornucopia, Stanford University. Junior Heifer Calves: 1st, Durmelia Pontiac Korndyke, Stanford University; 2nd, Velma Korndyke Netherland, Morris and Son; 3rd, Twin Sister to 2nd prize winner, same name and same owner. Aged herd: 1st and 3rd, Morris and Son; 2nd, Stanford University. Breeders young herd: 1st and 3rd, Morris and Son; 2nd, Stanford University. Breeder calf herd: 1st and 3rd, Morris and Son; 2nd, Stanford University. Get of Sire: 1st and 2nd, Morris and Son; 3rd, Stanford University. Produce of Dam: 1st and 3rd, Morris and Son; 2nd, Stanford University. Junior champion bulls: Prince Juliana Walker, Morris and Son. Senior and grand champion bull, Lorena Korndyke, Morris and Son. Junior champion cow: Squaw Queen Johanna, Morris and Son. Senior and grand champion cow: Inka Tricomia, McGillivray.

Jersey Cattle—Bulls three years and over: 1st, Rochette's Noble, C. P. Hembree; 2nd, Pansy's Gertie Lad, D. F. Conant; 3rd, Valet's King of Lockeford, N. H. Locke and Co. Bulls two years and under three: 1st, The Imp of Lockeford, J. Thorpe; 2nd, Pansies Bertie Lad, Conant; 3rd, Wieland's Silver Marquis, W. W. Fisk. Senior yearling bulls: 1st, Undulata Prince, Hembree; 2nd, Lorna's Altama Interest, C. D. Hayworth; 3rd, Maidkins Fox, J. T. Williams. Junior yearling bulls: 1st, Rochette's Noble Fountain, Hembree; 2nd, Foxy Laddie of Lockeford, Locke and Co.; 3rd, Butler's Boy Jr., Rancho Dos Rios. Senior bull calves: 1st, Rochette's Noble Pearl, Hembree; 2nd, California Peer, University of California; 3rd, Golden Marquis 2nd, Thorpe. Junior bull calves: 1st, Nobles Golden Rochette, Hembree; 2nd, Brilliant's Spray Marquis, Hembree; 3rd, Olga Rhyme's King of Lockeford, Locke & Co. Cows fours years or over: 1st, Imp. Brilliant Spray, Hembree; 2nd, Amethyst of Venedera, G. H. Miller; 3rd, Lemola Bell, Locke and Co. Cows three years and under four: 1st, Salome of Mossdale, Thorpe; 2nd, Valet's Golden Biddy of Lockeford, Locke and Co.; 3rd, Prince Bosnia, Hembree. Cows two years and under; 1st. Financial Prospect of Lockeford, Locke and Co.; 2nd, Valet's Dairy Maid of Lockeford, Locke and Co.; 3rd, Lois of Valley View, W. W. Fisk. Senior yearling heifer: 1st, Noble Peer's Golden Rupee, Hembree; 2nd, Mermaiden's Fern 2nd, University of California; 3rd, Valet's Fresno Lemola of Lockeford, Locke and Co. Junior yearling heifers: 1st, Noble Peer's Jewell, Hembree; 2nd, Noble Peer's Violet, Hembree; 3rd, Champion's Figgis, J. A. Goodall. Senior heifer calves: 1st, Noble's Aley, Hembree; 2nd, California Mermaiden, University of California; 3rd, Warder's Golden Lucy of Lucerne Farm, Fisk. Junior heifer calves: 1st, Mary Reusser, Williams; 2nd, Warder's Nugget of Lucerne Farm, Fisk; 3rd, Iberian's Heroine, Hembree. Aged herd: 1st, Hembree; 2nd, Thorpe; 3rd, Locke and Co. Breeders young herd: 1st, Hembree; 2nd, Locke Co.; 3rd, Thorpe. Calf Herd: of sire: 1st, Get of Noble Pen, Hembree; 2nd, Get of 1st, Hembree; 2nd, Locke & Co.; 3rd, Thorpe. Get Rochettes Noble, Hembree; 3rd, Locke & Co. Produce of dam: 1st, Produce of Mermaiden's Fern, Univ. of Cal.; 2nd, produce of Benedita of Venadera, Miller; 3rd, Miller. Junior, Senior and Grand Champion bull, Rochettes Noble, Hembree. Junior and Grand Champion cow, Noble Peer's Jewel, Hembree. Senior Champion cow: Imp. Briliant Spray, Hembree.

Guernseys—Junior champion bull: Wanagen Vista, Dr. J. Henderson. Senior champion bull: Tungsten, W. H. Saylor. Grand champion bull: Tungsten, W. H. Saylor. Junior champion cow. Princess Sequel, Elliott-Brant Rancho. Senior champion cow, Imp. Julia's Maid 4th of Bauileu, Saylor. Grand champion cow: Princess Sequel, Elliott-Brant Rancho. Bulls three years old or over: 1st, Kitchener's Corona Boy, Leland; 2nd, Nevma's Bartholomew, Elliott-Brant Rancho; 3rd, Imp. Raymond IV's Island, Saylor. Bulls two years old and under three: 1st, Kingston, Saylor; 2nd, Don Adonis, Humphrey; 3rd, Levison Kitchener Boy, Lathrop. Junior Yearling Bulls: 1st, Quinn's Kitchener Lad, Lathrop; 2nd, Prince Segis of Mayhews, Humphrey; 3rd, Sally's Pride of Alta Vista, Lathrop. Senior Bull Calf: 1st, New Grove King of Briar Bank, Elliott Brant Rancho; 2nd, Mable's Kitchener Vista, Henderson; 3rd, Donaldo of Mayhews, Humphrey. Junior Bull Calf: 1st Wanagen Vista, Henderson; 2nd, Butternut's Glendett of the Rancho, Elliott-Brant Rancho; 3rd, Mayhew's Truetype, Humphrey. Cows four years old or over: 1st, Imp. Julia's Maid IV of Beaulien, Saylor; 2nd, Imp. Corona of Sea Vew Farm Second, Lathrop; 3rd, Butternut Queen, Elliott-Brant Rancho. Cows, three years and under four: 1st, Saylor's Dew Drop Gem, Saylor; 2nd, Berkshire Lassie, Humphrey; 3rd, Ida Lyons, Elliott-Brant Rancho. Cows, two years and under three: 1st, Saylor's Jewelette, Saylor; 2nd, Raymond's Eighth Desire of Lewison, Lathrop; 3rd, May Belle of Maple Lodge, Elliott-Brant Rancho. Senior Yearling Heifer: 1st, Princess Sequel, Elliott-Brant Rancho; 2nd, Lois Valentine's Lad's Lassie, Elliott-Brant Rancho; 3rd, Richmond's Corona Lad, Lathrop. Junior Yearling Heifer: 1st, Saylor's Justinee's Anita Sequel, Saylor; 2nd, Cotot's Petite, Lathrop; 3rd, Kitchener's Nell, Lathrop. Senior Heifer Calf: 1st, Alcena's Pride of Alta Vista, Lathrop; 2nd, Saylor's Primrose Sequel, Saylor; 3rd, Fortunata, Elliott-Brant Rancho. Junior Heifer Calf: 1st, Violet's Corona Lass, Lathrop; 8rd, Junior Heifer Calf, Johnson. Aged Herd: 1st, Saylor; 2nd, Lathrop; 3rd, Humphrey. Breeders' Young Herd: 1st, Lathrop; 2nd, Saylor. Calf Herd: 1st, Lathrop; 2nd, Saylor. Get of Sire: 1st, Get of Imp. Lord Kitchener, Lathrop; 2nd, Get of Castlettan, Saylor; 3rd, Henderson. Produce of dam: 1st, Lathrop; 2nd, Saylor; 3rd, Henderson.

Duroc Jersey Swine—Boars two years or over: 1st, J. Daggs; 2nd, J. K. Fraser; 3rd, E. Johnson. Boars 18 months and under two years: 1st, Rucker and Coppin; 2nd, J. E. Thorpe. Boars one year and under 18 months, 1st, Univ. of Cal.; 2nd and 3rd, J. K. Fraser. Boars six months and under one year: 1st, Univ. of Cal.; 2nd, E. Lamb; 3rd, Thorpe. Sows two years and over, 1st, Rucker and Coppin; 2nd, Thorpe; 3rd, Fraser. Sows 18 months and under two years, 1st and 2nd, Fraser; 3rd, Thorpe. Sows one year and under 18 months: 1st, Rucker and Toppin; 2nd and 3rd, Daggs. Sows six months and under one year: 1st, E. Lamb; 2nd, Thorpe; 3rd, Rucker and Coppin. Sows under six months: 1st, E. Johnson; 2nd, Fraser; 3rd, Daggs. Boar and three sows over one year: 1st, Rucker and Coppin; 2nd, Daggs; 3rd, Fraser. Boar and three sows under one year: 1st, Univ. of Cal.; 2nd, Daggs; 3rd, Fraser. Boar and three sows over one year bred by exhibitor: 1st, Daggs. Boar and three sows under one year bred by exhibitor: 1st, Univ. of Cal.; 2nd, Daggs; 3rd, Fraser. Produce of sow: 1st, Univ. of Cal.; 2nd, Fraser; 3rd, Daggs. Barrow, any age: 1st, Fraser; 2nd, Johnson. Pen of three barrows: 1st, Fraser; 2nd, Johnson. Champion boar: Daggs. Champion boar bred by exhibitor, King Col., Univ. of Cal.; Champion sow, Lamb's American Beauty, Lamb. Champion sow bred by exhibitor: Lamb.

Berkshire Swine—Boars two years and over: 1st, F. W. White; 2nd, C. E. Barrows; 3rd, A. B. Humphrey. Boars 18 months and under two years: 1st, Oak Grove Dairy Farm; 2nd, T. W. Goethe. Boar one year and under 18 months: 1st, Humphrey; 2nd, S. S. Day; 3rd, Pure Gold Stock Farm. Boars six months and under one year: 1st, White; 2nd, Humphrey; 3rd, Barrows. Boars under six months: 1st, Humphrey; 2nd, J. L. Gish; 3rd, Humphreys. Sows two years and over: 1st, White; 2nd, Humphreys; 3rd, White. Sows 18 months and under two years: 1st, 2nd and 3rd, Humphreys. Sows one year and under 18 months: 1st and 2nd, Humphreys 3rd, White. Sows six months and under one year: 1st, Univ. of Cal.; 2nd, White; 3rd, Humphreys. Sows under six months: 1st, Humphreys; 2nd, Univ. of Cal.; 3rd, Humphreys. Herd of one boar and three sows over one year: 1st and 3rd, Humphreys; 2nd, White. Herd of one boar and three sows under one year: 1st and 3rd, Humphreys; 2nd, White. Herd of one boar and three sows over one year bred by exhibitor: 1st, Humphrey. Herd of one boar and three sows under one year bred by exhibitor: 1st and 2nd, Humphrey; 3rd, White, Get of Sire: 1st, Humphrey; 2nd, White. Produce of dam: 1st, Humphreys; 2nd, Barrows. Barrows any age: 1st, Humphreys; 2nd, H. L. Murphy. Pen of three fat barrows any age: 1st, Humphreys. Champion boar of any age: Oak Grove Dairy Farm. Champion boar bred by exhibitor: Barrows. Champion sow any age: White. Champion sow bred by exhibitor: Humphreys.

Poland Chinas—Boars two years and over: 1st, W. Bernstein; 2nd, M. Bassett; 3rd, W. A. Young. Boars, one year and under 18 months: 1st, Bernstein; 2nd, A. M. Henry; 3rd, Bassett. Boars, six months and under one year: 1st, Bassett; 2nd, Bassett; 3rd, Young. Boars under six months: 1st, Bassett; 2nd, A. L. Bassett; 3rd, Bassett. Sows, two years and over: 1ts, Bernstein; 2nd, Bernstein; 3rd, Bassett. Sows, 18 months and under two years: 1st, Bernstein; 2nd, Young; 3rd, Bassett. Sows, six months and under one year: 1st, Young; 2nd, Univ. of Cal.; 3rd, Henry. Sows under six months: 1st, Bassett; 2nd, Bassett; 3rd, Bassett. Herd, one boar and three sows over one year: 1st, Bernstein; 2nd, Bernstein; 3rd, Bassett. Boar and three sows under one year: 1st, Bassett· 2nd, Bernstein; 3rd, Bassett. Get of sire: 1st, Bassett; 2nd, W. H. Browning. Produce of sow: 1st, Bassett; 2nd, Geo. V. Beckman. Champion boar, any age: Bernstein. Champion boar bred by the exhibitor: Bassett. Champion sow any age: Bernstein. Champion sow bred by exhibitor: Bassett.

Yorkshire Swine—University of Cal., all entries and all awards.

O. I. C. Swine—Boars two years and over: 1st, C. B. Cunningham. Boars six months and under one year: Univ. of Cal. Boars under six months: Univ. of Cal. Sows two years and over: 1st, Cunningham; 2nd, Cunningham; 3rd, Cunningham. Sows 18 months and under two years: 1st, Cunningham. Sows under six months: 1st, 2nd and 3rd, Cunningham. Boar and three sows over one year: 1st, Univ. of Cal. Boar and three sows under one year: 1st, Cunningham. Get of sire: 1st. and 2nd, Cunningham. Four pigs any age, 1st and 2nd, Cunningham. Fat Barrow: 1st, University of Cal. Champion sow any age: Cunningham. Champion boar any age: Univ. of Cal. Champion boar any age bred by exhibitor: Univ. of Cal.

Rambouillet Sheep—All entries and all awards, Bullard Bros.

Shropshires—Rams two years and over: 1st, Bishop Bros.; 2nd, T. S. Glide. Rams one year and under two: 1st, Bishop Bros.; 2nd, Bishop Bros.; 3rd, Glide. Rams under one year: 1st and 2nd, Bishop Bros.; 3rd, Glide. Ewes two years and ober: 1st, Bishop Bros.; 2nd and 3rd, Glide. Ewes one year and under two: 1st and 2nd, Bishop Bros.; 3rd, Glide. Ewes under one year: 1st and 3rd, Bishop Bros; 2nd, Univ. of Cal. Ram any age, two ewes one year and under two, two ewes under one year: 1st, Bishop Bros.; 2nd, Glide. Champion ram: Bishop Bros. Champion ewe: Bishop Bros.

Hampshire—Rams under one year: 1st, Univ. of Cal., 2nd, Kaupke Bros. Ewes two years and over: 1st and 2, Kaupke Bros. Ewes one year and under two: 1st and 2nd, Kaupke Bros. Ewes under one year: 1st, Univ. of Cal.; 2nd and 3rd, Kaupke Bros. Flock: Kaupke Bros. Pen of four lambs: Kaupke Bros.

Southdowns—All entries and all awards, Univ. of Cal.

Dorset Horns—All entries and all awards to T. S. Glide.

Merinos—Three rams two years and over: All entries and all awards, Bullard Bros. Pen of three rams one year and under two: 1st, Bullard Bros.; 2nd, T. S. Glide. Pen of three ewes two years or over: All entries and all awards, Bullard Bros. Pen of three ewes one year and under two: All entries and all awards, Bullard Bros. Pen of three ewes under one year: 1st, Bullard Bros.; 2nd, Glide.

Middle Wool Type Pen of three rams under one year: 1st, Bishop Bros.; 2nd and 3rd, T. S. Glide. Pen of three ewes two years or over: 1st, Bishop Bros. Pen of three ewes one year and undr two: 1st, Bishop Bros. Pen of three ewes under one yar: 1st, Bishop Bros.

Middle Wool Breeds—All entries and all awards, Univ. of Cal.

Percherons—Open class free for all: 1st, Krural, Dunham-McLaughlin; 2nd, Ithos, M. Bassett; 3rd, Jacquard, Whitehall Est., Inc. Stallions three years and under four: 1st, Lucon, Dunham-McGlaughlin; 2nd, Londricitos, Whitehall Est., Inc.; 3rd, Laos, Dunham-McGlaughlin. Stallions two years and under three: 1st, Majeur, Dunham-McGlaughlin; 2nd, Marchfield, T. D. McGlaughlin; 3rd, Mairam Dunham-McGlaughlin. Stallions one year and under two: 1st, Star, C. A. Penninger; 2nd, Marvel, E. Miller; 3rd, Ebro, Elliot-Brant Rancho. Mares four years old or over with foal at feet: 1st, Kate, Learnard; 2nd, Copula, William Bond. Mares four years old and over: 1st Fritzi, Penninger; 2nd, Pink Julia, Penninger; 3rd, Kamiche, M. Bassett. Mares three years and under four: 1st, Como, Ruby and Bowers. Mares two years and under three: 1st, Marie, Ruby and Bowers; 2nd, Miss Inquiet, Bond. Mares one year and under two: 1st, Patti, Learnard. Foals under one year: 1st, Bay Boy, Learnard. Get of sire: 1st, Penninger. State Class, stallions four years or over: 1st, Ithos, Bassett; 2nd, Jacquard, Whitehall Est., Inc. Stallions, three years and under four: 1st, Londricitos, Whitehall Estate.; 2nd, Loquace, C. J. Albrecht. Stallions two years and under three: 1st, Mordu, Albrecht; 2nd, Insurance, Learnard; 3rd, Buster, Penninger. Stallions one year and under two: 1st, Star, Penninger; 2nd, Marvel, Miller; 3rd, Ebro, Elliot-Brant Rancho. Mares four years or over with foal at feet: 1st, Kate, Learnard; 2nd, Copula, Bond. Mares four years or over: 1st, Fritzi, Penninger; 2nd, Pink Julia, Learnard; 3rd, Kamiche, Bassett. Mares three years and under four: 1st, Come, Ruby and Bowers; 2nd, Lili, Whitehall Est., Inc. Mares two years and under three: 1st, Marie, Ruby and Bowers; 2nd, Miss Inquiet, Bond. Mares one year and under two, 1st, Patti, Learnard. Foals under one year: 1st, Baby Boy, Learnard; 2nd, Copula's Colt, Bond. Champion stallion, open class, Lucon, Dunham-McGlaughlin. Champion stallion, State class, Londricitos, Whitehall Est., Inc.

Shire Horses—All entries and all awards. Henry Wheatley. Special offer of the State Stallion Registration Board for stallion and three of his get: Severn Pilot and three colts, McCormick Bros.

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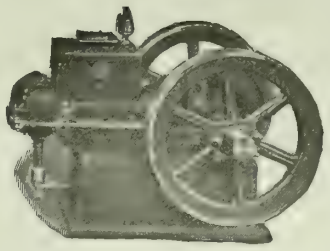

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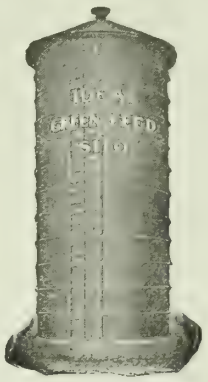

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Stock-man on Eight-Hour Law

(We are receiving far more correspondence on the 8-hour amendment than we can possibly print, without excluding other things which subscribers are paying their money to get. We desire to lay aside many letters which are bright and well written, but largely irrelevant. It is not possible to discuss all the ills which flesh is heir to, under the heading of 8-hour law. It will neither cause them all nor cure them all. The preponderance of the discussion is against the law, as anyone might reasonably expect it to be.—Editor.)

To the Editor: Sir, having read many views of the 8-hour law, both for and against, I desire to express my own, as I now see the conditions in this state and foresee what they will be in two years hence if this so called advancement should take place. For it must be advancement if we believe what the socialists say that 6 hours out of the 24 is sufficient for any human being to labor. There may come a time when man will only labor 6 hours out of the 24, but that time will not come in the farming districts until man has worked out some scheme whereby he can control the elements.

Here is where the 8-hour law will hurt the people living in the cities as much as in the rural districts. Assume that this law has carried, though I don't think it will for I have too much confidence in the fairness of the men and women in this great state of ours. We assume that it has passed; what happens? At one stroke of the voting stamp you have put the middle-sized farmers, merchants and contractors out of business. They are the very people who do the most for the laboring people. You have shortened the working time until it is impossible for them to carry on their different vocations without employing more help. The average small merchant has now in his employ all the help that his business will support. What will happen when you force him to employ one third more help to accomplish the same amount of work? He must either out the wage or raise the price of commodities. But practically the selling price will be fixed by the large wholesale mail-order houses outside our state, where they can and will work their help 12 hours to meet extra trade. Therefore, what will the merchants do? They must either go out of business or cut the wage one-third. you will say the laborer will quit. Very well, let them quit and go on to the farm, where there is work for many. The farmer boy is tired of the farm; he will do our city work for us. So we will follow the city chap to the farm. We go to a rich alfalfa district. There is work for all. Dairying and alfalfa growing take lots of help. We meet the farmer and say: "Boss, don't you need some help?" "No, thank you." We go to another and get the same reply. After a few refusals we wonder why we can't get work, and from the next man we meet we are determined to find out. As the alfalfa is ready to cut, and lots of it, we go to a rather prosperous-looking farmer and ask why we cannot get work. The reply is this: "You city chaps thought the farmers were working too many hours, so you shortened time on us, and as we could not control the elements in nature or in man, we devised a plan whereby the farm could exist and here it is.

The Contract Way.—"My neighbors formerly employed one to six men the year around and paid $2.00 to $2.50 per day working 9 to 10 hours as the season permitted in the field. I mean 9 to 10 hours actual time in the field not taking care of their stock. The time has now been shortened so that we could not work more than 6 actual hours in the field. So realizing that we could not meet the extra expense in feeding more horses and mules, the extra expense in buying and housing more machinery, my neighbors all wanted to quit so I saw the opportunity. I bought up this vast acreage of alfalfa land and started a 1000 cow dairy." "But you have to employ labor to put up all this hay." "Not I," he replied. "See those scales out there. I have let a contract for 5 years to a bunch of Italians, who are not afraid to work and work more than 8 hours when it is necessary. My daughter weighs the hay as it is hauled in. These fellows irrigate and put the hay in the barn for one dollar per ton, where as formerly it cost me $1.25 per ton, and all my own time, when I did the work with day laborers."

Cows by Contract.—"It is the same with the cows. I have let a contract to a colony of Austrians to milk and care for the cows at a cost of $2 per head, while before the law was passed I had a few cows and milked them by day labor, and it cost me on an average of $3 per month to milk and care for the cows."

In the Fruit Business.—Well, let us try the fruit, what do we find here? Something worse; we find that all the orchards that amounted to anything were rented to Japanese, who do all the work, working from daylight until dark, and on inquiry, we find that the industrious little brown people were also contracting to put up all the grain and hay as well as take care of the grain fields, and in the wintertime when there is nothing else to do they contract to cut all the wood. On questioning a Japanese as to why he did not conform to the eight-hour law, he said: "Sixteen hours is too much time to sleep. Me work 16 hours and sleep 8 hours."

"What is to become of us laborers who voted the eight-hour law? There is only one course for us to pursue, and that is to leave the state and go where an American can sell his labor as he pleases."

The Effect on the State.—It is a known fact that no bunch of Americans can work together without a boss, and in passing this law you have voted a condition in this state just the opposite of what you wanted. This state is being rapidly settled up by small farmers, who are coming here from all over the world, to make this their home. Now to saddle a law upon us farmers, before you raise the price of the commodity to meet this extra expense, will be suicidal on the part of the state. Everyone who has ever tilled the soil, well knows that we cannot work by any set number of hours. We all know that the hours on the farm have been materially shortened, but it has not been by any set or fixed laws, but by evolution and progress. What we do want is less drastic legislation. Stop some of the eternal investigation of capital and let the laboring man realize that it is absolutely necessary that men must have some money before they can give other men employment and that the man who has worked for 15 or 20 years to accumulate something for old age will not expend any time or money employing other people unless there is some profit for him.

If this eight-hour law was a nation-wide movement, and would apply to every one alike, that is, no one could work more than 8 hours, the farmer could laugh at it, for in six months city laborers would cry, "Vote it down," for the cost of living would go up one-third or more. But as we are only one state I have tried to show what will happen to the laborer should this law pass. We have got to compete with our sister states and with other lands where they are not afraid to beat the sun up. What we want to get away from as soon as possible is this law of "The Survival of the Fittest." Stop this competition between labor and capital. Let labor and capital work together for the betterment of mankind.

Durham, Cal. C. A. C.

Poultry for Profit

AUTUMN POULTRY NOTES.

[Written for the PACIFIC RURAL PRESS by Susan Swaysgood, Pomona.]

This is the month when fall or autumn commences; nothing very serious about that for California, only it serves to remind us that the seasons are about to change. For those hens that are molting it will be chilly early in the morning, so if convenient just turn the water vessel over at night, when making your last rounds, then fill it from the hydrant in the morning. Makes just about four or five degrees difference to the hens, who are always thirsty in a morning. Give them a feed of grain in plenty of litter, and fresh drawn water and the chickens won't know September from June. And they will go to cackling and laying in just about half the time they would if allowed to drink chilled water, eat a little grain off the floor, and then go and hunt up a corner to get out of the cold.

Sometimes a very small thing turns the balance, and we all want the balance in our favor if possible.

Then again, this is the month when the hens need plenty of green feed to help them along; if we want eggs in winter we must prepare the hens to give them. It's the forehanded man that gets winter eggs; not the man who is always lagging, and going to do things tomorrow. "Never put off until tomorrow that which can be done today", is the best slogan for a chicken man that I know of, because tomorrow is too long in coming, hens need material to make eggs, or to get them in condition today, and it must always be today.

Substitutes for Green Feed—For those who are not able to give their hens green feed, there are several fairly good things that help out. Ground alfalfa is one of the very best substitutes we have for this purpose. But in feeding it to hens that have not been used to it, a little diplomacy will have to be used in some cases. The best way is to pour boiling water on the quantity you think about right and after it cools mix it into your mash food. It will be necessary to use the hands and mix it well into the other foodstuff. Keep using a little more every time and soon they will eat all that should be fed to them. Another good thing that serves as a substitute for green feed is beet pulp. This comes in fresh from the sugar factories in the fall months and if moistened with water and a little

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will help to keep them in good condition, saving loss and worry.
A healthy hen will molt quickly.
COULSON COMPANY
PETALUMA, CAL.

POULTRY BREEDERS' DIRECTORY

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FOR SALE—Three months old and up. White Leghorn pullets. At all times. P. O. Box 442, Petaluma, C

salt, a few handfuls of bran and other mash feed, it makes a palatable and cheap food for growing chicks and hens too. But it must not be left lying around in the sun, after being wet, as it soon sours. Just moisten it and feed in a short time while it is fresh and sweet. This is cheaper and goes further in feeding than the ground alfalfa; it appears to be more satisfying. Ground cocoanut cake wet up and mixed in a mash is another substitute; this has some food value and acts as a filler, but I don't think very much of it as an egg producer.

But all poultry, old and young, little and big, must have something to fill them up at least once a day, and with grain as high as it is we must feed something as fillers. Of course the fresh green products of the field stand higher than all the substitutes, but there are cases where a man has no green feed, or not sufficient; and then it is well to know what will answer in its place.

The man who has a little vacant land should sow barley this month; his chickens can then be in "clover" during the winter months at very little cost of time and money.

It is time to get that scratching shed ready for the hens too. If you wait until it rains you will be in the same fix as old man Arkansaw—"when it rains you can't fix it, and when it don't rain, it won't need fixing."

There is money in a scratching shed, the hens sing all the time no matter how the weather is. And the comfort to the feeder is not to be despised. The feed is kept dry and wholesome, no sour, musty feed boxes with poison lurking in the cracks and joints to start up an epidemic just when your hens should be doing something.

These things can all be avoided by being ahead of the work; an eight-hour man will always be trailing behind, he will lose one hour out of the eight watching the clock to see when his time is up. So I would not advise eight-hour men to go in the poultry business; if they do they will never be ready for the season's changes.

Turkeys in a Movable Fence.—Would you consider it sensible to undertake to raise 200 turkeys on a 12 acre ranch; part to be put into Kaffir corn, the remainder to be in alfalfa, confining them on one acre at a time with a six foot wire fence and moving them over the field of alfalfa until the grain is harvested, then turning them out on barley stubble to fatten?—G. P., Merced.

Answer: Yes, the proposition is sensible enough. You would have plenty of room on one acre for the poults while small, and as they grow in size and age you could move the fence a little oftener than was necessary during the first month. If the alfalfa could be irrigated right after the fence was moved and a new growth of grass gotten ready it would be practically new ground by the time the turks were due to move back on that lot.

I am a little doubtful about the fattening on barley stubble unless aided with something else. Barley alone is a very slow fattener, and if the turks should get a rambling fever, the exercise they would take would just about offset the flesh they might put on with barley. But if they were taken up and finished off with soft feed and yarded for about two or three weeks before killing time you would gain in quality and quantity both.

You can settle that later, when you have them raised; if you are new to the business, don't start with poor in-bred stock. See to it that your male bird is from far enough away to be unrelated to the females. Turkeys do not stand inbreeding and it is merely wasting time and money to try to raise related stock.

Breeders of Indian Runner Ducks, Look for Change in the Name.—This breed of ducks has lost part of its name. As the breed did not come from India, it has been decided at a meeting of the A. P. A., that they have no need for the word Indian, in the nomenclature. Runner ducks, no matter what variety, is now the name for these birds. That saves one word for the advertiser to pay for. Wonder if he will be satisfied, or whether he won't kick about this change. Two men decided it, one made a motion and the other seconded it, and lo! the thing was done. Well, I guess two men have decided far more momentous things than duck names and the world has had to stand for it, so the duck men need not feel hurt. "What's in a name," anyway, even to a duck?

POULTRY SHOW NOTES.

At the State Fair held at Sacramento last week, a larger than usual poultry exhibit was given. Better preparations had been made for the comfort of the chickens as well as owners. Over 600 fine birds, besides pigeons, were shown and the issuing of awards in catalogue form before the show closed made exhibitors feel good.

The judges were C. G. Hinds and A. V. Moore. One of the livest men at the show was W. A. French of Stockton, who carried off several premiums with his Golden and Silver Seabright Bantams.

Speaking of hustlers, Mr. French is a master of the game. He is one of the old timers in the poultry business, and the State show was no more than well under way than he began to let everybody know that Stockton was to hold its fourth annual poultry exhibit from October 28 to 31. The shows heretofore held at Stockton have been uniformly successful and we anticipate a big one there next month.

San Francisco poultry men are getting behind the show to be held in this city from December 8th to 13th and the promise is now for a bigger show than last season. Features of importance to the poultry industry are to be introduced. Much attention is to be paid dressed poultry and every angle of this business will be displayed. A free sales secretary has been appointed to assist buyers and sellers of stock. No charge will be made for this work. In the exhibits some of the finest stock in America will be entered, not only in fancy poultry but in the utility branch of the business.

A move is on foot to organize the Federated Poultry Association of California. Several prominent poultrymen have the affair in charge and it is expected that the first meeting will be called late in September.

POULTRY SHOW DATES.

Riverside County Fair, Oct. 13-17. E. I. Hammond, Riverside, Sec'y.

Anderson, Oct. 22-24. O. W. Dais, Sec'y.

San Joaquin Poultry Association at Stockton, Oct. 28-31. W. H. Mackay, Sec'y.

Sacramento, Nov. 2-7. C. A. Wilkins, Sec'y.

Santa Cruz, Nov. 11-14. E. J. Harran, Sec'y.

Petaluma, Nov. 11-16. Thos. McGuire, Sec'y.

San Mateo County Poultry Association, at Redwood, Nov. 12-15, Fred West, Burlingame, Sec'y.

Willows, Nov. 18-21. O. F. Schuchard, Sec'y.

Oakland, Nov. 24-29. C. G. Hinds, Sec'y.

Pasadena, Dec. 1-5. M. D. Cartwright, Sec'y.

Modesto, Dec. 2-5. A. D. Roberts, Sec'y.

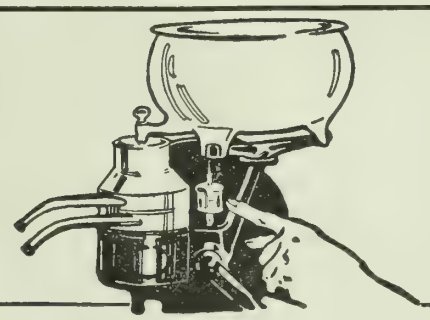
San Francisco, Dec. 8-13. W. H. Ingram, Sec'y.

Porterville, Dec. 15-17. A. D. Fawcett, Sec'y.

Phoenix, Ariz., Dec. 23-26. State Fair Sec'y.

Los Angeles, Jan. 6-12. H. H. Mumford, South Pasadena, Sec'y.

Why is it necessary to have one growers' organization to market dried fruit in Santa Clara Valley, another in Sacramento valley, and none at all in San Joaquin valley? Multiplication of growers' marketing agencies multiplies the cost and does not increase the efficiency.



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is just such an oil. It is made for separators and it is of just the right body to quickly reach those finely adjusted, close fitting bearings. It protects them from wear. It enables your separator to deliver *all* the butter fat. It eliminates unnecessary repairs and lengthens the life of your machine. There is no better oil made for your separator. Ask your dealer for it.

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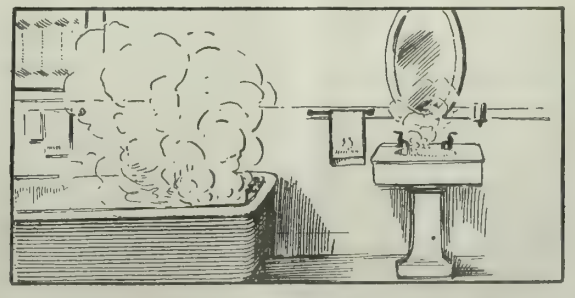

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The Home Circle

BETSEY SNOW AT THE "SHRINE OF BEAUTY."

[Written for the RURAL PRESS by Betsey Snow.]

If a woman wants to be famous, it is policy for her to be beautiful. I was beautiful myself once, that is, before I was married. Fred told me time and again that I was not only the prettiest girl in town, but that I was the prettiest he ever saw. He hasn't said anything about it for several years, but when he describes ladies he has met, and dwells eloquently on their good looks, and I ask him innocently if they look like me, he only answers "How absurd!" He never would hurt my feelings by saying I was no longer pretty, and I may be over-sensitive in supposing he meant anything of the kind when he delicately calls me absurd.

It is a woman's duty to preserve her good looks; first to please her husband, and secondly to make herself famous. With the first object in view, during his last absence, I made me a new dress, the proceeds of a few chickens, and ornamented it with ribbon nicely dyed. On his return I arrayed myself in it and the smile that I try never to forget but it wasn't particularly striking, and I was obliged to call his attention to it, by asking if my new dress wasn't becoming.

He looked at me in a happy, dignified way, and asked why I didn't buy one of those combination suits such as Judge Kelley's wife wears. "She's a majestic lady, and has such exquisite taste in dress—you would do well to imitate her, Mrs. Snow," he said.

I explained to him that combination suits cost from ten to eighteen dollars, and I only got one dollar and seventy-five cents for my chickens.

"But, Betsey," said he in a grieved tone of voice, "it would be better to have dresses less frequently and get good ones. Cotton and wool wrinkles, and wrinkled goods look cheap. Mrs. Kelley's dresses are never wrinkled, but always have a smooth fresh look."

"If I had had two dollars more I would have bought a dress worthy the wife of a man with such refined tastes as you have, Mr. Snow."

But he was reading and probably did not hear my last remark. He very kindly and in his clearest tones read me the following startling items which show that beauty makes women famous:

"Mrs. Dean, the handsomest lady in the city, came near being run over this morning by a runaway team."

"A pretty girl in Buffalo ran away last Sunday night with Sam Sly, her father's bookkeeper."

"Mrs. Collins, whose beauty is the theme of every tongue, rowed a boat across the bay to Indiana island in twenty-eight minutes."

"Alice Smith, a handsome brunette, shelled a peck of peas in just twenty-seven minutes."

"Miss Sniffin, an acknowledged beauty, suffered for years with catarrh, and Holt's preparation of boneset cured her."

"How delightful!" I exclaimed as Mr. Snow paused for comment. "It would have taken Alice Smith half an hour no doubt to shell a peck of peas if she had not been a handsome brunette, and Miss Collins if only ordinary looking might have been ten minutes longer crossing the bay. And then how lucky that Mrs. Dean is the handsomest lady in the city, or those horses might have trampled her to death."

"That's not the idea, Mrs. Snow. Human nature is very human, and men make great sacrifices for beauty. We worship at its shrine, Mrs. Snow."

"How nice!" I cried in delight, "I suppose, then, Mr. Dean and Mr. Collins get up and build the fire on cold mornings, and take care of the babies nights, and do the churning and leave off smoking and drinking, and turn the cigar and liquor money into new bonnets and dresses and things for their wives. Beauty is indeed a great blessing!"

I looked often in my glass and found that wrinkles had got around my mouth and eyes, and the tooth I had the misfortune to break had the knack of showing itself every time I spoke. It would cost Fred two or three dollars to get it mended, and so I concluded to let it remain. As it was plain to be seen that I was no longer a beauty, I turned to my "Rules for Young Wives" for guidance. Here, indeed, was comfort in the following passage:

"Hold your husband's affections at all hazards. When the beauty that first charmed him begins to fade, use the little arts of affectionate attention he loved so well. Do not forget the endearing names or the roses you wore in your hair. There is beauty in sweetness of manners as well as of complexion. A true husband loves the former as well as the latter."

"How easy!" thought I. I went to my rosebush, and was delighted to find a brilliant red rose waiting to supply the roses in my cheeks that faded some years ago. I placed it in my hair. The contrast was striking, as my hair is thin and getting gray. Hepzibah was asleep in her little bed. Fred was engaged in reading the last State Horticultural Report. I donned a clean apron and with my mending, which consisted of a pair of well-worn overalls belonging to Jerry, the German hired-man, seated myself at the table opposite Fred and near the lamp. I inaugurated my little love scheme with "Freddie, darling, please read your little Bessie something nice." I spoke in a clear tone, although my heart fluttered and my hand trembled so that I could hardly thread my needle.

Mr. Snow raised his eyes, a look of alarm settled in his fine face and the report dropped from his hands. For fully five minutes he gazed into my face, only turning his eyes to take in the rose and geranium sprig.

"What's the matter, Betsey?" he as last gasped.

Not wishing to retreat from a field so full of happy possibilities, I resumed: "Freddy's Bessie wants him to read her something nice, because Freddie is a good hubby."

"Mrs. Snow, are you crazy?" he demanded in a tone with which one deals with lunatics and refractory children.

"Not a bit, hubby. Won't you read Bessie a nice little poem?"

Instead of drawing his chair close to mine and reciting one of Ella Wheeler's sweetest songs, he arose, paced the floor, glanced at me sideways, and watched my fingers as I adjusted the patch on Jerry's overalls. When his excitement abated he asked in a husky voice if any of my distant relatives had died in a madhouse. On being informed that I had never been advised of such a tragedy in our family, he asked:

"What is that great red rose and that sprig of peppermint in your hair for?"

I smilingly informed him that the sprig was geranium and not peppermint, and that it and the rose were there because he was so fond of seeing me wear flowers.

He looked at me suspiciously again, thinking, no doubt, of the distant insane relatives that were possible.

"Why do you tattle so childishly, Mrs. Snow? I am amazed."

"Don't you remember, darling, that before we were married you insisted that I should call you Freddy, and you called me your own little Bessie? All writers on domestic matters insist on keeping up the little arts of courting-days, and as I am not as pretty as I was when a girl, I thought it best to follow the 'Rules for Young Wives.'"

Mr. Snow smiled sadly and resumed his reading.

A fixed plan and a definite purpose are necessary in early life if creditable results are to be desired. Huxley wrote in his diary when a young man, "I must adopt a fixed plan of study, for unless this is done I find that time slips away without knowing it"; and he added, "This is about the only resolution I have stuck to."

DRINK "QUALITY" TEA AND COFFEE

From IMPORTER to CONSUMER direct by PARCEL POST

"CHA-MA" - - - - 60 CENTS A LB.
A FAMOUS GREEN UNCOLORED JAPAN TEA

"NIN-GAR BLEND" - 50 CENTS A LB.
A DELICIOUS BLACK ENGLISH BREAKFAST TEA

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OF THE CHOICEST BLACK TEAS IN THE WORLD
PACKED ONLY IN 1-LB. ABSOLUTELY AIR-TIGHT TINS

"E-CIL-A BLEND" 1 LB. 40 C; 3 LB. $1.00
A CHOICE BLEND OF PURE COFFEE
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TEACHING PAYS
Teachers Receive From $70 to $150 Per Month and Have a Pleasant Occupation - Free Catalog
PREPARE AT
WESTERN NORMAL
STOCKTON, CAL.

A REMEDY AGAINST FLEAS.

All persons who have lived in a house which has become infested with fleas in summer will know how these creatures inhabit the floor by preference, and how they will jump upon the legs and ankles of everyone who passes near them. Taking advantage of this fact, some years ago, when the lower floor of McGraw Hall of Cornell University was badly infested by fleas, which had come from animals temporarily kept there in confinement, Professor S. H. Gage invented the following ingenious plan: He had the negro janitor put on a pair of rubber boots, and then tied sheets of fly paper, with the sticky side outward, around the legs of the boots. The janitor was then told to patrol the lower floor for several hours a day. The result was gratifying and rather surprising. The sheets of fly paper soon became black with fleas, and had to be changed at intervals; but by this means the building was almost completely rid of the pest, with a minimum of trouble to everyone except to the janitor.—Insect Life.

Apple Shortcake.—This is not so well known as strawberry shortcake, but it is equally good when well made. The usual directions for shortcake result in the plainest of soda biscuits; but this is a great mistake as such dishes are not supposed to be concocted with a single eye to the benefit of the nursery. What is needed is a reasonably plain pie crust, which, by being handled like puff paste, can be made very nice. This paste is rolled into two thin layers and lightly baked on a jelly tin, placing one on top of the other, but being careful not to press them together. When baked they can be separated with much greater ease than if made into one cake and pulled apart. Rich apple sauce should then be liberally spread between the two layers of crust and on top, and served with cream.

A new dish of potatoes consists of mashed potatoes and lean cooked ham. Mash half a dozen boiled potatoes, and season with butter, milk, salt and pepper. Mix with the potatoes two heaping tablespoonfuls of ham chopped very fine, a tablespoonful of chopped parsley, and a teaspoonful of onion juice. Beat until very light, and turn into a buttered baking dish. Smooth and scatter the top with a layer of fine stale breadcrumbs. Brown in the oven. If mashed potatoes that are left over are used for the dish, heat them before mixing with the other ingredients.

Wash your glassware in two waters if it becomes dusty, using a toothbrush to clean places which are obstinate about becoming clear. If regularly used one water is sufficient. Pour a dishpan full of hot water and wash the glass with a clean cloth, using plenty of good soap. Keep the water hot, and let the glass lie in it until hot also. Dry quickly on a dry, soft cloth. Soap is essential to secure clearness and brilliancy. Every little crease and projection will glitter and scintillate with varying colors, a pleasure to behold.

Simple, spontaneous laughter is not only one of the signs of a normal and healthy nature, but it is also a wonderful aid to the sanity of the human spirit and the healthful balance of the various moods and temperaments of our composite being. The hymn-writer realized this when he gave thanks for

"Human tears and human laughter,
And the depth of human love."

Strawberry Souffle.—Wash, hull and cut, or mash lightly, one cup strawberries. Beat the whites of two eggs till stiff, add two heaping tablespoonfuls powdered sugar and the berries, and beat until very thick and stiff. Use a broad bowl and a wire egg beater or spoon, and beat with a long, steady stroke. Pile it lightly on a glass dish and serve with delicate white or sponge cake.

If tablecloths and napkins are stained with peaches, berries, pears, coffee or tea, before being washed they should be spread over a small tub, pouring boiling water through the stains. Have plenty of it and do not be discouraged if the stain does not start at once. Try, try again. Then wash as usual. Of course, the fresher the stain the easier it will come out.

NECESSARY DURING VACATION.

"Why do girls wear engagement rings?"

"On the same principle that a person ties a string around his finger—so they won't forget they're engaged."—Boston Transcript.

Tourist: "What's the mean temperature around here?" Boomer: "Stranger, thar ain't mean temperature hyarabouts. It's allus delightful!"

Small Boy (in awed tones): "Pa, do you know I looked into the parlor just now, and what do you think I saw?"

Father: "Can't guess, my boy."

Small Boy: "Why, sister Polly was sitting on the piano-stool, and her young man was kneeling in front of her, holding her hands like glue."

Father: "Ah! sensible young fellow that. He was holding her hands to prevent her playing the piano."

The Stephenson Patent Cooler

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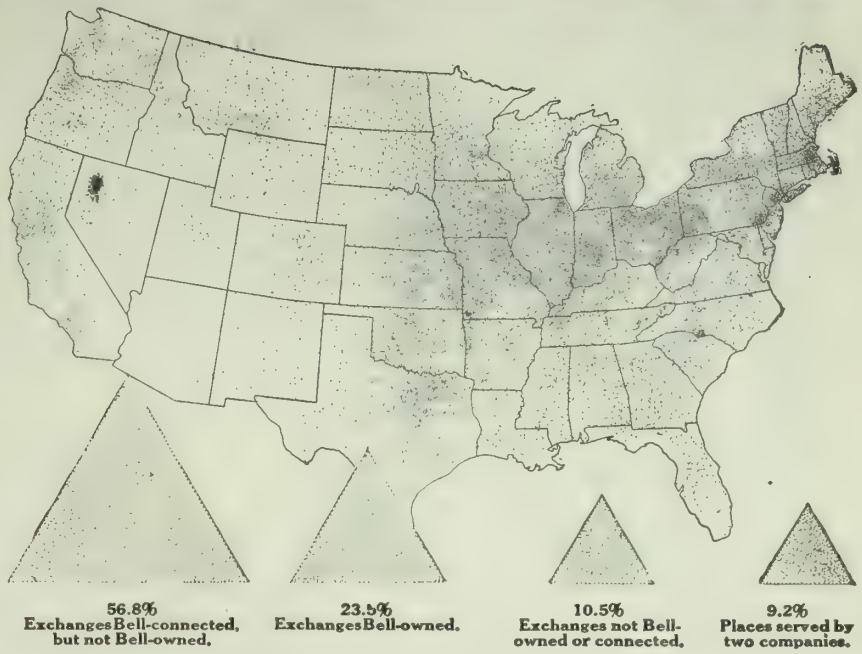
Perfect Ventilation
Absolutely Sanitary

Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.
L. ANDERSON CO., Mfrs., Martinez, Cal.,

What the Telephone Map Shows



EVERY dot on the map marks a town where there is a telephone exchange, the same sized dot being used for a large city as for a small village. Some of these exchanges are owned by the Associated Bell companies and some by independent companies. Where joined together in one system they meet the needs of each community and, with their suburban lines, reach 70,000 places and over 8,000,000 subscribers.

The pyramids show that only a minority of the exchanges are Bell-owned, and that the greater majority of the exchanges are owned by independent companies and connected with the Bell System.

At comparatively few points are there two telephone companies, and there are comparatively few exchanges, chiefly rural, which do not have outside connections.

The recent agreement between the Attorney General of the United States and the Bell System will facilitate connections between all telephone subscribers regardless of who owns the exchanges.

Over 8,000 different telephone companies have already connected their exchanges to provide universal service for the whole country.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

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OFFERS SPLENDID INDUCEMENTS FOR

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Opportunities for the Man of Moderate Means as well as the Capitalist

Every section holds out a welcome. Let us know what you want and we will endeavor to find it for you. A letter will receive prompt and careful attention. Address

BODE K. SMITH
Asst. General Passenger Agent
MILLS BUILDING, SAN FRANCISCO

The Markets.

(Unless otherwise noted prices quoted are f. o. b. San Francisco.)

San Francisco, Sept. 23, 1914.

WHEAT.

The eastern market has shown something of a downward tendency for the last few days, and northern values have also dropped a little. The local market is rather weak in sympathy, with liberal offerings and only a moderate demand, but values are not quotably lower.

California Club, ctl.	$1.80	@1.85
Forty-fold	1.85	@1.90
Northern Club	1.80	@1.85
Northern Bluestem.	2.00	@2.10
Northern Red	1.80	@1.95

BARLEY.

Brewing and shipping grain is again quoted here, and there is considerable export business. The speculative market, however, is quiet and easy, and spot feed has been marked down a little, with rather large offerings.

Brew'ng & Ship'ng	$1.20	@1.25
Choice Feed per ctl	1.15	@1.17½
Common Feed		Nominal

OATS.

There is a gradually increasing demand for seed oats, and the red variety shows a further advance. White oats are again quoted, after being practically out of the market for some time.

Red Feed	$1.40	@1.50
Seed	1.65	@1.75
Gray		Nominal
White	1.65	@1.70
Black Seed	1.75	@2.25

CORN.

The foreign offerings are said to be of very poor quality, but are offered at rather low prices, and have made some impression on the market. Eastern yellow has dropped a little from last week's figures.

California Yellow..		Nominal
Eastern Yellow ...	1.90	@2.00
Eastern White		Nominal
Egyptian		Nominal
Milo Maize		Nominal

RYE.

Prices are steadily held at the recent advance, but the movement is confined to narrow limits.

Rye, per ctl	1.50	@1.60

BEANS.

Shipments of all varieties of new beans have so far been very light, but offerings are increasing, and in view of the generally large production prices show a downward tendency. Few changes have been made this week, but bayos, limas and pink beans are all lower. New blackeyes and large whites are beginning to move in the valley, and some limas have been shipped from the south, but the crop there is about three weeks later than last year. Much larger shipments, however, are expected next week.

(On wharf.)

Bayos: Cal., pr ctl.	$3.25	@3.50
Mexican	3.75	@4.00
Blackeyes	3.50	@4.50
Cranberry Beans ..	4.00	@4.25
Horse Beans	2.75	@3.00
Small Whites	5.00	@5.25
Large White	4.00	@4.25
Limas	5.75	@6.00
Pea		Nominal
Pink	3.25	@3.50
Red Kidneys		Nominal
Mexican Red		Nominal

SEEDS.

Holders of mustard are asking 9c, but there is practically no business at this figure. There is nothing new in the other lines quoted here, but miscellaneous garden seeds are now being shipped by growers in considerable quantity.

Alfalfa	Nominal
Brown Mustard, per lb	Nominal
Canary	Nominal
Hemp	3½ @ 4 c
Millet	2¾ @ 3¼c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

No further change is noted in the local market, but there is less strength in the situation than for some weeks past, and declines have occurred in some other markets, owing to the easier situation in wheat.

Cal. Family Extras.	$6.60	@7.00
Bakers' Extras ...	5.50	@6.00

HAY.

Arrivals have been about the same as for the previous week, and while the quantity is by no means large, there is still some difficulty in disposing of the shipments as they come in. The demand continues very light, few buyers being inclined to accumulate large supplies. The arrivals still include large amounts on consignment, and it is expected that this movement will continue for some time. Offerings of fancy hay have increased a little, and find a ready market. Alfalfa hay is moving slowly, with liberal offerings.

No. 1 Wheat, or Wheat and Oats	$8.00	@ 9.00
do No. 2	6.00	@ 7.50
Tame Oats	7.00	@11.00
Barley	6.00	@ 8.00
Wild Oats	6.00	@ 8.00
Alfalfa	6.00	@ 9.00
Stock Hay	4.50	@ 5.00
Straw, per bale	30	@ 45c

FEEDSTUFFS.

The general demand is only moderate, but prices in most lines are well maintained, rolled oats being higher. Cocoanut meal continues rather easy.

Alfalfa-Molasses Meal, per ton	$19.00	@20.00
Alfalfa Meal, per ton.	13.00	@14.00
Bran, per ton	30.00	@31.00
Oilcake Meal	33.00	@35.00
Cocoanut Cake or Meal	25.50	@26.50
Cracked Corn	42.00	@43.00
Middlings	34.00	@35.00
Rolled Barley	25.00	@26.00
Rolled Oats	32.00	@33.00
Shorts	33.00	@34.00

VEGETABLES.

The vegetable market shows no particular activity this week, and several lines remain very cheap, with larger offerings than can be easily disposed of. Tomatoes are about the weakest article on the list, with heavy shipments from the river district, and fancy stock is considerably lower. String and wax beans also are lower, while peas are higher, Alameda stock being slow of sale, though supplies are not large. Green peppers, egg plant, summer squash and okra are a little higher, while celery shows a wider range, according to quality.

Green Peppers, bell lugs	30	@ 40c
Green Peppers, Chili.	35	@ 50c
Carrots, per sack....	35	@ 50c
Green Peas, lb.	5	@ 6c
Tomatoes: Delta, lugs	25	@ 40c
Beans: Wax, per lb ..	1	@ 2c
String	1	@ 2c
Lima	2	@ 3c
Cucumbers, lugs	20	@ 30c
Eggplant, lugs	30	@ 50c
Green corn, sack ...	1.00	@ 2.00
Summer Squash, box .	25	@ 35c
Cream Squash, box...	30	@ 40c
Okra, box	40	@ 50c
Celery, doz	20	@ 40c

POTATOES AND ONIONS.

No changes in price have been made in this line lately, river potatoes and onions being very plentiful and easy. There has been some movement of potatoes to the Oregon market, where jobbers have been getting $1.50; but the late Oregon crop will soon be in, and is expected to be fairly large.

Potatoes:		
River Burbanks, ctl.	70c	@$1.00
Sweet Potatoes, ctl..	1.40	@ 1.50
Onions, New Yellow, sack	40	@ 50c
Garlic, Cal., per lb	10	@12½c
do. Oregon	10	@ 15c

POULTRY.

Values in all lines stand as last quoted. Offerings have been rather large, however, both of local and eastern stock, and the market is rather easy than otherwise.

Turkeys, old, per lb...	20	@21 c
Turkeys, young, per lb	24	@25 c
Large Broilers	20	@21 c
Small Broilers, per lb.	20	@21 c
Fryers, per lb	20	@21 c
Hens, extra, per lb...	17	@18 c
Hens, large, per lb...	18	@19 c
Small Hens, per lb..	15	@16 c
Young Roosters, per lb	20	@21 c
Squabs, per doz.	1.50	@ 2.00
Geese, per pair	2.00	@ 3.00
Ducks, doz.	4.50	@ 8.00

BUTTER.

Prices on all grades have dropped a little since the first of the week. There is no shipping demand just now, and supplies brought in on contract are rather heavy for local requirements. The warm weather has also had a depressing influence.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31	31	30½	29	29	29
Prime	27½	27½	27	27	27	27
Firsts	27	27	26½	26½	26½	26½

EGGS.

Pullets have been sagging a little, losing 2½c for the week, as the proportion of this grade in the offerings is larger than for some time past. Supplies of extras, however, continue to decrease, and the upward movement is still in progress.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	41	42	42	43	43	43½
Selected Pullets ..	34½	34	33½	33½	33	32½

CHEESE.

Flats and Y. A.'s are unchanged in price, though the latter has been in rather strong demand for the last few days. Monterey cheese shows a wider range, but the apparent tendency is upward.

Fancy Calif. Flats, per lb. ..	14½c
New Young Americas, fancy..	15½c
Monterey Cheese	14 @15½c

Butter:	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	27	27	27	27	26	26
Eggs	35	35	35	35	35	35
Cal. Cheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

Raspberries are a little higher, while strawberries and huckleberries are both coming in freely, and are offered below last week's figures. Apples remain quiet in the local market, and values are by no means strong, but there is no quotable decline, and a little shipping business is in progress. Bartlett pears are unchanged, while winter Nellis pears are offered at 50c to $1. Ordinary peaches in lugs are very cheap, and some small packages are offered at lower prices, though fancy lots are firmly seld. Black figs are slightly lower, white figs being firmly held. Pomegranates and persimmons are appearing in limited quantities, and find a fair market. Cantaloupes are doing much better, as shipments to this market have slowed up a little; but watermelons remain cheap and plentiful. In grapes, tokays, muscats and common black varieties are lower, and while there is quite a lively demand the offerings are excessive.

Huckleberries, lb	5	@ 8c
Strawberries, chest ..	1.50	@ 3.00
Raspberries, chest ...	4.00	@ 6.00
Apples, New Crop:		
Belleflowers	65	@ 75c
Spitzenberg	65	@ 90c
Gravenstein	50	@ 1.00
Crabapples	40	@ 85c
Quinces, box	75	@ 1.00
Nectarines, crate	75	@ 1.00
Pears, box, large	1.00	@ 1.35
do No. 2	50	@ 75c
Winter Nellis	50	@ 1.00
Peaches, lugs	20	@ 40c

CLASSIFIED ADVERTISEMENTS

Rates 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

LAND FOR SALE.

CHEAP LANDS FOR SALE in Byron-Bethany new irrigation district, one of the best irrigation systems in the State or West. A fine climate and good water. Good schools and churches. Taking everything into consideration there is no place in the State where there are such good opportunities as in the Byron-Bethany country. Land values are very reasonable and terms easy. If you are looking for something good, call on J. W. Wayne, Real Estate Agent, Byron, Contra Costa County, Cal.

VICTORIA, AUSTRALIA, WANTS SETTLERS.

Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion being arranged. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

FOR SALE—On account of sickness and death, forty acres of fine income property. Twenty-five acres best varieties full-bearing almonds. Four and one-half acres Manzanillo olives and three acres of wine grapes. Must be sold at once. Terms. Address E. C. Rotes, Mingesdale San Joaquin County, Cal.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

FOR RENT—Ranches from 180 to 300 acres for dairy purposes near Stockton, Cal.; five year leases; rental, cash payable monthly in advance secured by a mortgage. Apply to Postoffice Box 802, Stockton, California.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg., San Francisco.

FOR SALE on easy terms. Improved 30 acres irrigated ranch clear. A money-maker. Horses, cows, chickens, alfalfa. O. McQuaid, Manteca, Cal., R. D.

WILL EXCHANGE Irrigated Land for either milk or beef cattle. Land located near Gridley. Address H. S. Hopkins, Live Oak, Cal.

FOR SALE CHEAP—Send for complete printed description. Two acres. Poultry. Orchard. Good buildings. Near school. Joining city limits. Sonoma Co. Geo. Langlois, Sebastopol, Cal.

TO LET—300 acres of alfalfa land on Dixon Ridge. Abundance of water for irrigation. Apply, J. H. Glide, Dixon, Cal.

FOR RENT OR SALE—1018 acres of grain and alfalfa land near Williams. H. V. Traynham, College City, Cal.

FOR RENT—300 acres of alfalfa land on Dixon Ridge. Abundance of water for irrigation. Apply, J. H. Glide, Dixon, Cal.

TREES AND NURSERY STOCK.

IT WILL PAY you to let me figure with you on large or small plantings of Apples, Pears, Apricots, Prunes, Peaches, Strawberries, Logans, Blacks, Currants, Gooseberries, etc. Send list of requirements. To secure mailing lists, 12 deciduous fruit trees for $2.50—your selection. 100 Strawberries for $1.00. All prepaid. H. A. Hyde, Nurseryman, Watsonville, Cal.

WALNUT TREES—Eureka and Elmonte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

SPINELESS CACTUS—Any quantity, 6 cents a slab; 100 and over, $5 a hundred. Samples, including postage, 20c. 295 Page St., San Jose.

THORNLESS CACTUS SLABS for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

BEES.

BEES AND HONEY—Bee-keeping pays big. Price list bees, instruction books free. Samples and prices pure California honey, ten cents. Spencer Apiaries Co., Box 12, Nordhoff, Cal.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

WANTED.

FOR RENT—Grain farm, 120 acres, 3 miles from Stockton, macadam road, 7 room house, barn, granery, wagon shed, hog pen, 8 chicken houses, brooder house, sanded yard and corral, wind-mill, tank. Terms, $700.00 per annum, ½ in advance. Wm. A. French, 545 W. Park St., Stockton.

LOCAL REPRESENTATIVES to write orders for Roeding "True-Trees." Highly satisfactory selling plans and commission offered ranchers, fruit growers, real estate men of salesmen, for a part of their time this Fall and Winter. Write at once for full particulars. FANCHER CREEK NURSERIES, Fresno, Calif., care Holland Bldg.

INDUSTRIOUS AND CULTURED young German desires position on modern farm. No wages expected, but opportunity to learn and pleasant surroundings desired. Applicant in good health. Best references. Reply to Room 306, Merchants' National Bank Building, San Francisco.

WANTED—Position as Superintendent or Foreman on ranch. Experience in grain, alfalfa, stock, dairy, fruit and ranch machinery, engines, etc. Can handle men any capacity. Credentials for past ten years. Box 336, Bakersfield, Cal.

RANCH SUPERINTENDENT is open for engagement. Experienced in working all kinds of labor and in all lines of farming, fruit growing and the care of live stock. Is a worker and is not seeking an easy job. Address, 520 E. Lime ave., Monrovia, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

READ my advertisement on another page. I have just what you are looking for in lands. G. M. Rea.

WANTED—To lease good farm near coast, preferably with option to buy. 318 W. 62nd St. Los Angeles.

MISCELLANEOUS.

FOR SALE—Rumley Toe-Hold Gas Tractor. Fourteen horse power on draw bar. Used 90 days. One John Deere engine plow; four 14-inch bottoms, ten foot double acting, cut-away disc. Engine used 90 days, implements less. All in perfect order. Owner retiring from orcharding. Terms. Box 3, Live Oak, Cal.

REBUILT GAS ENGINES sold for 50 per cent. of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

"SMITH'S PAY THE FREIGHT." To reduce the high cost of living send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

MAKE YOUR GRAPES into dry wine and vinegar. Big profits! Write for particulars. Stamp for reply. H. W. Dixon, Box 56, Elk Grove, Cal.

MUST GO—1000 Burbank Spineless Cactus, $10 per hundred. Milch Goats, Does and Kids. Edgar Woolbridge, Lakeport, Cal.

do, small box	25@	80c
Plums, crate	75@	1.25
do, lugs	75@	1.25
Prunes, lugs	75@	1.25
Figs: Black, double layer	40@	50c
White, single, layer	25@	40c
Pomegranates, box	50@	75c
Persimmons, box	1.00@	1.25
Cantaloupes, crate	75@	1.25
Watermelons, doz	75@	1.50
Casabas, lugs	50@	75c
Grapes: Malagas, crate	40@	60c
Tokays, crate	40@	60c
Seedless, crate	40@	50c
Muscat, crate	50@	60c
Black	25@	40c

DRIED FRUITS.

There is still a fairly active movement in the country, but except for prunes, figs and raisins, the market shows little strength. Apples are easy, with a large output in prospect; and the very limited export demand for apricots has caused a decidedly easy feeling, as it is difficult to bring about a movement in the east. A good many southern growers have been trying to dispose of their crops with poor success, and a good many Santa Ana growers have sold at 6c. Peaches receive very little attention, but a good many growers are still holding on. Figs are pretty well cleaned up, and find quite a strong demand in the east, as the outlook for imported goods is poor. The larger sizes of prunes are very strong, as some packers have had difficulty in filling contracts, and supplies in the county are light. The new Associated seeded raisin prices put out last week were lower than the eastern trade had expected, and a very satisfactory movement has taken place. The New York Journal of Commerce says:

Opening prices on 1914 crop seeded California raisins and London layers have proved to be something of a surprise to a majority of the trade in that they are lower than the figures generally expected. Fancy seeded offer at 6⅞c in 16-oz. and 5 5-8c in 12-oz. cartons, choice at 6½c for 16-oz. and 5¼c for 12-oz. cartons. For bulk the prices quoted are 6c for fancy and 5¾c for 12-oz. cartons and 5¾c for choice. The quotations on London layers are 5½c for 1-crown, 5¼c for 2-crown, 5½c for 3-crown and 5¾c for 4-crown. All prices are f. o. b. Fresno, subject to the usual cash discount, and apply to Oct. Nov. shipment. They are guaranteed by the Associated Raisin Co. against its own decline up to Dec. 31 next. The general trade, according to brokers, has taken hold freely at the quoted figures, but some of the large Eastern jobbers are understood to be still holding off, looking for concessions in the way of an extra discount. If they secure this, it is said that it must come out of brokers' commissions, as the terms made by the Associated will not be varied from in the smallest degree for even the largest buyer. Advices received from Canada indicate that the trade there has been very free buyers of freshly seeded and seedless old crop for September shipment, and that they are expected to be in the market for a considerable quantity of new goods at the opening prices. The Canadian demand is largely due to the very close clean-up in the Dominion of spot stocks and partly to the uncertainty as to future supplies of imported raisins owing to the war situation.

Evap. Apples, 1914	5 @	6 c
Apricots, 1914	6 @	9 c
Figs: White, 1914		4 c
Black	2½ @	2¾c
Calimyrna, 1914		5 c
Prunes, 4-size basis, 1914	5 @	6 c
Peaches, new	3 @	4 c
Pears	6 @	7 c
Raisins (in sweatbox):		
Loose Muscatels	4 @	4½c
Thompson Seedless	5 @	6 c
Seedless Sultanas		5 c

CITRUS FRUITS

Oranges are going east from the southern portion of the state at the rate of about 50 cars daily, and the auction prices show a fair demand for the fruit, though the prices this year are not up to the average of former years at this season.

On the New York auction, Monday, Sept. 21st, seven cars of Valencias were sold at prices that averaged from $3.45 down to $1.60 per box. At Philadelphia, the same day, four cars of Valencias averaged from $3.05 down to $1.45. At Boston, the auction prices were $2.90 down to $1.45 per box. The Chicago auction showed oranges at $2.75 to $4.00.

Lemons are still cheap, due largely to foreign shipments. The auction prices in the east last Monday averaged from $2.55 up to $5 per box.

Shipments of oranges to the local market are light, but little is needed, as there is only a very limited demand. Lemons are again quoted lower, as supplies are increasing, and the eastern market is again getting fairly large supplies of foreign lemons.

Oranges:		
Valencias, box	$1.25@	2.25
Tangerines, crate	75c@	1.25
Grapefruit, seedless, bx	1.00@	2.50
Lemons, box	2.00@	5.00
Limes, case		Nominal

NUTS.

Prices for new walnuts will be out in a few days, and the nuts are now arriving at the warehouses in large quantities. Inquiries are very large, and a heavy movement is expected as soon as the prices are fixed. The quality is said to be very good. Almonds are rapidly being shipped out.

Almonds, 1915 crop:		
Nonpareils	21	c
IXL	20	c
Ne Plus Ultra	19	c
Drakes	16	c
Texas Prolific	16	c
Walnuts, new crop:		
No. 1 Softshell	Nominal	
No. 1 Hardshell	Nominal	
Budded	Nomnial	
No. 2	Nominal	

HONEY.

The local market is very quiet, and rather easy on all but the finest grades. Shipments from many points are increasing, the late output being larger than was expected, and arrivals here are larger than can be readily disposed of.

Comb: White	12 @	14 c
Amber	8 @	10 c
Dark		8c
Extracted: White	7 @	8 c
Amber	4½ @	6 c
Off grades	3 @	4 c

BEESWAX.

Prices are quoted as before, but there is very little demand here.

Light	32 @	32½c
Dark	27½ @	31 c

WOOL.

Values are almost entirely normal as the larger buyers are not inclined to take hold, and the outlook is by no means assured. Most growers are holding, however, being confident that the demand will revive before long.

Fall clip:		
San Joaquin	10 @	12½c
Northern	16 @	20 c

HOPS.

Local buyers still show some hesitation, though a few sales are being closed within the range quoted. A number of sales in Oregon are reported at 18c. Picking is about finished.

1913 crop	16 @	20 c
1914 crop	16 @	20 c

LIVE STOCK.

Hogs have been coming in much more freely for the last week or two and prices are slightly lower. Practically everything else, however, is firm with advances on several grades of sheep and cattle. Dressed beef and mutton has also been marked up a little.

(Delivered San Francisco.)

Steers: No. 1	6¾ @	7 c
No. 2	6½ @	6¾c
Cows and Heifers: No .1	5¾ @	6¼c
No. 2	5¼ @	5½c
Bulls and Stags	3 @	5 c
Calves: Light	9 @	9½c
Medium	8½ @	9 c
Heavy	7 @	8 c
Hogs: Grain-fed, heavy		
250 to 350 lbs		9 c
125 to 250 lbs		9½c
Prime Wethers	5¼ @	5¾c
Prime Wethers	5 @	5½c
Ewes	4½ @	5 c
Milk Lambs	6½ @	6¾c

HORSES.

Another good sized lot of Northern California stock, of weights suitable for delivery and general wagon work, has been sold here this week, and was fairly well received. While there is no very urgent demand, the local market is evidently in much better shape than a month or two ago, and it is expected that from now on shipments of the average volume will move without difficulty.

Heavy drafters, 1700 lbs. and over	$225@275
Light drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@125
Delivery Horses, 1050 to 1250	75@100

SPECIAL DECIDUOUS MARKET REPORT.

By J. L. Nagle.

The shipment of Malaga grapes has been somewhat lighter during the last week owing to the increased supply of Tokays, and also due to the fact that there seems to be a fairly active demand for raisins.

In our judgment, the Tokay shipments are too heavy, and, as there is little demand at prices in excess of 90c, every effort has been made to have the growers cease picking for at least a week or ten days, but this most of them have been unwilling to do on account of their being afraid of early rains. All markets seem to be over-supplied with Tokay grapes, and as eastern home-grown crops are plentiful and cheap, native varieties have the preference. Furthermore, the first shipment of Almeria grapes is due to arrive within a few days and we understand that arrangements have been made whereby more than a million kegs of Spanish Malagas will be shipped to the United States. The prospects for California Tokays is anything but bright, at least for the next few days.

Late Placer and El Dorado Bartletts are arriving east in good condition and in some instances have sold as high as $3.50 a box. The demand is active, due, in a measure, to the fact that Northwestern pears do not seem to be holding up.

Business conditions in general show slight improvement in the east and, on account of the heavy movement of apples, none of the markets are showing a very active demand.

The markets for the past week ranged as follows:

New York: Bartlets $1.55 to $2.96; B. Hardy $1.35 to $2; G. Duke, $1.60; Elbertas, 76c; Kelsey, 95c to $1.03; Gross, 85c to $2; Crawfords, 72c; Malagas, 85c to $1.35; Tokays, $1.02 to $2.20.

Chicago: Bartletts, $1.25 to $1.95; B. Hardy, $1.38 to $1.85; G. Duke, $1.35 to $1.60; Kelsey, $1.04 to $1.50; Gross, $1.48; Crawford, 70c to 85c; Thompson Seedless, $1.10 to $1.40; Malagas, 60c to $1.25; Tokays, $1.10 to $1.90.

Boston: Bartletts, $1.75 to $3.35; B. Hardy, $1.65 to $2.40; G. Duke, $1.05 to $1.70; Giants, $1.00 to $1.75; Elbertas, 65c to 80c; Kelsey, 50c to $2.90; Gross, 75c to $1.80; Crawford, 65c to $1.00; Malagas, 65c to $1.30; Tokays, 75c to $1.65.

Total shipments of deciduous fruits to September 22d, were 11,216 cars, as against 9,641 cars to same date last year.

SPRUCE BOXES LUMBER
FRUIT, CANNERY, BUTTER
AND ALL OTHER KINDS
PACIFIC BOX FACTORY
354 BEACH ST. SAN FRANCISCO, CALIF.
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ARE you looking for the BEST—absolutely THE BEST—conditions to be found in all California? Nothing like it anywhere in all the State. Read and reflect—then write us for further information and details.

WATER—abundant and good GRAVITY irrigating and domestic water, ALL you want—WHEN you want it—AS you want it—ANY hour of day in the year at lowest possible cost (only the upkeep of ditches), averaging about 38c per acre per year. One-half miner's inch (about six acre feet) with every acre, from you own canal, with perpetual water right for every acre you buy.

SOIL—the richest, loamy, easily worked soil, containing abundant lime and phosphates, producing enormous crops of alfalfa, grains, fruit and vegetables. (We just cut 28 acres of alfalfa, yielding 132 tons, almost 4½ tons per acre, at one cutting). Level lands, but with enough grade to irrigate easily, that can be cleared and prepared for crops at low cost.

DECIDUOUS FRUITS—The slope of the land, and the general climatic conditions, make this land peculiarly adapted to the raising of fruits, which have a coloring—a flavor—a crispness and size that give them rank among the finest of the kind that are grown in California.

STOCK-RAISING—the fine quality of the alfalfa and grasses grown here, favorable climate, pure water, with mountain range for summer feed, guarantee to the stock-raiser that perfection only obtained under most favorable conditions, and warrants the high prices that are obtained for Owens Valley grown cattle, hogs, horses and other stock. Hundreds of head of cattle are fattened here for market annually.

DAIRYING—in any country has long been recognized as a money-making occupation. Owens Valley being exceptionally favored in the matter of bright, dry climate, pure water and fine feed, offers opportunities to the dairyman which few communities can boast. Before many years Owens Valley will be one of the banner dairying valleys of this State.

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BEST OF BANK and business references on request. We will demonstrate every statement to your satisfaction. You cannot afford to overlook this limited offer (only 55 forty-acre tracts in all), which is the new subdivision of one of the banner ranches of this state. Just placed on the market by responsible owners. Write, phone or call for further information and illustrated printed matter.

G. M. Rea, Secretary

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Toilet Combinations complete to floor; special bankrupt stock. **$10.00**

Low down enamel steel toilet combination, complete to floor.. **$12.50**

Low down vitreous china closet combination. **$16.00**

Special reductions on Kitchen Sinks: 20x30, No. 2; 18x36, No. 2 **$2.75**

Corrugated Galvanized Iron, special price, until further notice, all lengths from 6 to 10 feet; per 100 square foot **$3.65**

Roofing paper: 1 ply sanded **$1.00**

2 ply sanded **$2.75**

Samples sent on request.

Wall Board: 650 pounds to the thousand. No. 2, regular price, $25, cut to per thousand sq. ft.... **$19.00**

Standard line House Paint, guaranteed. All colors, per gallon **$1.50**

Shingle stain, all colors and black..... **$0.50**

Graphite Roof Paint. per gallon **$1.00**

Interior Oil Stains per gallon..... **$1.00**

Everything else in the paint line at proportionate prices. We carry everything in BUILDING MATERIAL. Our stock is complete.

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We carry everything in this department. Two light, double hung windows, 1⅜ inches thick. Best Quality American window glass, all sizes ..... **60c UP**

No. 1 Colonial Door, selected kiln-dried Oregon Pine. This is a special value, all stock sizes .... **$1.50 UP**

SECOND HAND BUILDING MATERIAL CARRIED ONLY BY WHITING WRECKING CO.

Two-inch dimension Lumber up to 2x12, up to 20 feet long, per M. **$12.00**

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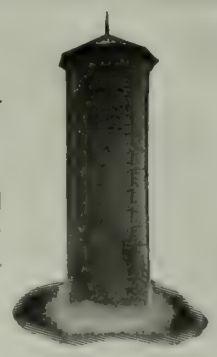

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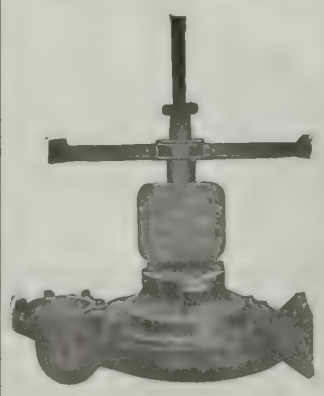

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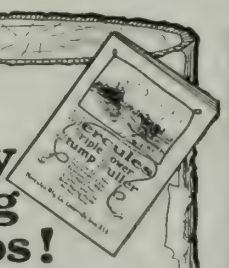

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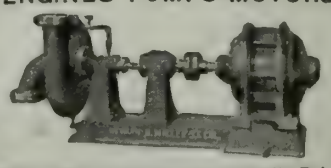

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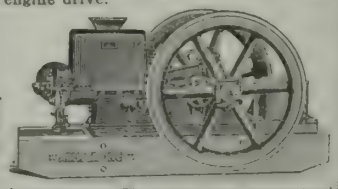

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THE
PACIFIC RURAL PRESS

Vol. LXXXVIII—No. 14 San Francisco, Saturday, October 3, 1914 Forty-fourth Year

Why Purer Milk Means Higher Prices.

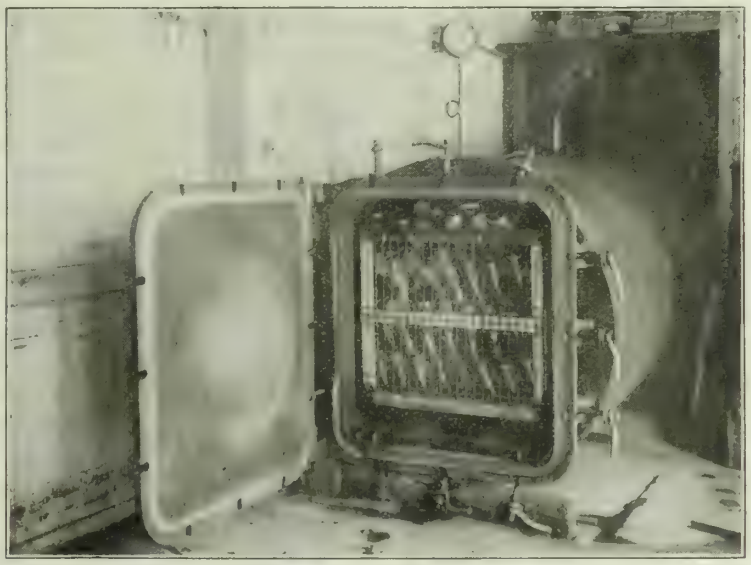
[Written for PACIFIC RURAL PRESS.]

The economic side of whole milk production is quite naturally of more interest to the dairyman than any other phase of the market milk problem, and while there are dairies in California where the owners have been able to manage their business so that they could turn out a really high class milk at a minimum cost, and in that way make fair money on their investment, the average dairyman who tackles the whole milk proposition has found that not all is gold that glitters; and as a result has decided that more money could be made along other lines.

Perhaps the highest standard of perfection yet accomplished by the dairymen in the way of pure milk may be seen in the certified plants where cleanliness is the watchword above all others. While a few such plants in this State are running at a fair profit to their owners, their investment and overhead expenses are away out of reach of the ordinary dairyman. While we may admire their methods and like their milk, there are on the one hand few dairymen who can enter the business; and on the other hand few consumers who feel able to pay the price of such milk when delivered to their doors, as all such milk is delivered.

It may be said, therefore, that while we have found high standards, such standards are not the ones which will solve the city milk problem, either from the producers' or consumers' standpoint.

At the milk conference recently held at the University of California, Berkeley, the prevailing notion seemed to be that the one reason we have not advanced to more satisfactory standards has been due to the fact that too much law and not enough education has been practiced, resulting in the dairyman getting the same or nearly the same for his product that he did many years ago, but under a much heavier expense. This is due in many instances to laws that have little to do with pure milk production but forced upon him by parties knowing little of the practical, but a lot about the theoretical principles of sanitary milk.



Sterilization Adds to Cost of Pure Milk.

Scene at Sleepy Hollow Ranch, Marin County.

Milk Cooling and Pasteurizing at University Farm, Davis.

From the discussions which were brought out, and the papers which were read, a few of which will be found in other columns of this paper, it was admitted that dairymen are not getting paid for quality, except possibly for certified milk, but rather for quantity, the same as is found in dairy sections producing butter fat, and as long as there is no incentive offered the producer in the way of cash remuneration, little betterment can be expected by the consumer, unless efforts are made to show, in a practical manner, just how such milk can be produced in a more efficient and economical manner.

It was clearly brought out that in all other kinds of food stuffs, the consumer who expects quality, is willing to pay a premium for such articles, whereas with milk, all milk must be quality milk, and the price is supposed to be the same. Along this line an interesting point was brought out by a health officer of San Francisco, who stated that the people who are the heaviest purchasers of certified milk are not the wealthy patrons, as would naturally be expected, but rather the heavy deliveries of such milk go to the family whose daily wage is not supposed to warrant the added expense of $1.50 monthly. Thus it was shown that the educational work done, so far, among those best able to pay for good milk, has been of little benefit to the dairyman.

With the possible exception of enacting laws for the grading of milk, along similar lines to those now in force in the State of New York, the sentiment of the meeting was strong for allowing our present laws to regulate the situation, suggestions being made, however, that the inspection system could be greatly improved, first, by doing away with the large number of city and county inspectors whose work is mostly paralleled by that of the State Dairy Bureau, thus not only greatly increasing the cost of inspection, which comes ultimately out of the producer's pocket, but in many instances befudding the dairyman to such an extent that he really does not know what is expected of him. As Mr. Timm, of Dixon, stated, the dairyman running a city milk dairy, especially one which has been certified, has a hoard of inspectors after him all

(Continued on page 337.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 22, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka	.14	1.68	1.26	62o	44o
Red Bluff	.00	T	.78	96	52
Sacramento	T	T	.37	92	52
San Francisco	.00	.02	.28	80	52
San Jose	.00	.00	.36	86	44
Fresno	.18	.20	.25	96	54
Independence	.04	.20	.21	88	48
San L. Obispo	.00	T	.46	82	48
Los Angeles	.00	.01	.05	88	58
San Diego	T	T	.05	78	62

T means trace

The Week.

Under the direction of a power higher than the citizenship of California, the month of September went dry—nor did it require an amendment to the constitution, because it is a fact that Septembers are often dry, and it seems to be a decision of wide experience that dry Septembers are best for the state, although most people do like the refreshment which results from air-washing and dust-settling during the first autumn month. Very early fall rains, if at all heavy, do, however, catch late fruits, field-stacked grain, etc., causing thereby much trouble and sometimes considerable losses. Such early rains do also injure the nature-made hay crop which our "dry-feed" really is, and either pinch the range stock or the owner's back account, if he concludes to buy stuff to prevent the slatting of his beasts. To the credit of this dry September it may be safely concluded that everything worth gathering has had full chance to get under cover and everything edible dry goes into October in prime condition. It is the wet September morn which catches the California farmer scant.

But a dry September, though on the whole good, does call for thought and action. It does not at all mean that the coming season will be dry but it warns men to act as though it might be. Where water is available, the soil should be soaked deeply to allow as early start in fall gardening and field-cropping for early stuff as though rain had fallen. Fall sowing of alfalfa and of legumes for green-manuring should not wait for the rains, if one can get a start by irrigation. All those who have pumps should set them chugging and remember that one of the chief advantages of pumps is that a man does not have to wait for streams to rise and be dammed—as is too often the attitude of managers of "systems" toward their customers. Fall irrigation is the foundation for a good year, either from the clouds or from the ditch. Fall irrigation is often the surety of next year's fruit crop and sometimes the saving of the trees. Therefore, a dry September is not an excuse for lolling around in idleness: it is a sharp goad to get busy.

California Hay Comes Through.

It is not such an awful lot of hay, but it means a good deal, for 8,000 tons of California hay is more than ever before could break through the tape-bound conservatism of the army regulations. A San Francisco firm has landed a contract for that much for the Philippines at a reported figure of $150,000—which is pretty good for this kind of a hay year and will give our hay growers a little more confidence. It is, however, something of an experiment, for the war department has, for a long time, refused to buy California hay because it was claimed it is inferior to hay produced in Washington State and the Rocky Mountain states. Representative Kahn persuaded the Department to try an initial shipment of California hay in Manila, and following this test the San Francisco firm received the order. It has taken a long time to reach through the mossy covering of the army regulators with the idea that so-called grain-plants, cut at the proper moment, make hay, usually just as good and sometimes better, than that from so-called grass plants. Whether they have yet risen to the other fact, that so-called grain plants are actually grasses, we are not sure. The average eastern person, whether he wear shoulder straps or not, has much to learn about California hay, and Californians are keen for that education even though they have to wait for it to arrive by way of a report fired at Washington from Manila.

The Woes of Cotton.

Cotton does seem to be hard hit by the war—unless it be the gun variety; that ought to be very active, as its nature is. All kinds of humane things are being done to help the south get something out of this year's crop—even to generous individuals buying a bale apiece of it to make a market. If the hundreds of thousands who are doing this, according to telegrams from the east, should put their purchases to one of its traditional uses, we shall have the plumpest lot of American citizens since the days of Washington, when padded calves were the proper thing. But that will only dispose of a part of the produce for a single year. It is expected that a cotton convention, which is being held in New Orleans this week, may pass a resolution asking the Governor of each cotton state to call a special session of the Legislature to enact laws prohibiting planting in 1915. We do not exactly see how a state can invade individual rights that way, but the Mississippi cotton convention thinks it will work, and perhaps it will work by making people think they are prohibited—for they actually cannot be. Fortunately, the governor of California can dodge the question if it comes to him, for our legislature will be in regular session just at the right time. But new and little as we are in cotton we have sharp troubles of our own, briefly told by the Oakland Tribune in these words:

The cotton growers of Palo Verde Valley are asking for assistance. The cotton is ready for picking and some five hundred pickers are on the ground, but because the growers lack money with which to pay them, they have declined to go to work. The government will advance $40 a bale on warehouse receipts for cotton, but that is little satisfaction to the man whose cotton is in the field. The cost of picking is about $15 a bale, ginning $7.50, freight to warehouse $5, total $27.50. Unless the money can be secured soon it is feared the loss will be tremendous, as there are thousands of acres to be picked. The ranchers are willing to pay the highest rate of interest and an appeal is being made to secure money.

We hope they will get it, and besides we hope it will do them some good if they do. It is not clear, however, how the grower will get anything unless our California cotton mills can use the crop. For it is possible that cotton will not be worth anything to speak of unless the Southern states should jump the crop. Besides, there are other doubts: the cotton may not be up to grade required for Uncle Sam's advance: any man disposed to advance harvesting and moving expenses would probably require a safety margin of $12.50 per bale and even that would be reduced by warehouse charges, insurance, drayage, etc. The real question is, Will any one pay $27.50 and more for the cotton, and will he pay the grower anything for the growing of it? The situation looks rather sad to us, unless the local market can handle it for local manufacture or Asiatic shipment—the safety margin being only what difference in freight there may be, if any.

As one thinks of such things, there is probably enough accuracy in the outline to warrant the reflection that present plans for farm financing do not reach through. Crop growers by association and accumulation must amass funds to speed their own operations, for conditions are apt to arise with them, which even the best schemes of commercial credits will never cover.

Is the Truth about Cactus Good Enough?

We are apt to believe that the truth about California is good enough: why not apply the same rule to cactus? We have just read this, printed as from Shasta county: "The cost of cactus production will not exceed 50 cents per ton, which is one-seventh of that of alfalfa under the most ideal conditions." Suppose that cactus does cost as little as stated, for the sake of argument, for we are not at all sure of the figure, the comparison would mean that alfalfa standing in the field, just as cactus stands, costs the grower $3.50 per ton green weight under the best conditions—which is nonsense. The figure thus given for green, uncut alfalfa, might pass for an estimate of the cost of alfalfa hay in the stack — under those same "best conditions," perhaps. Now figure downwards from the hay to the green weight and figure also that green alfalfa is a good ration for growth or production, while green cactus is not even a good maintenance ration when fed alone, and where does that figure, about cactus as costing only one-seventh as much as alfalfa, go to? And yet we believe that cactus may prove to be a valuable and profitable thing under conditions which do not make for alfalfa. Cactus is a

good thing, but it needs to be protected from its friends; some of them are smoother than the plant itself.

Women in Farming.

We had a letter from an eastern enquirer the other day, asking if we really thought it desirable, physically, socially and morally, that women should be encouraged to go into farming. To answer that question would be to write a book, and that we imagine is just what the enquirer is up to. All that we could think of to say in a sentence was that a woman has all the rights that a man has, whatever they may be. But the question set us to thinking about the women we saw last year doing farming in what are now the war zones, and we are sure of one thing: that no man has a right to cause them to do the farming they are doing now—slaving in those sodden fields in want, weariness and woe, and doubtless doing it bravely and without complaint, except to a God who is being maligned by those who work human misery and wretchedness in his name. A friend made this point the other day: Women should determine questions of peace or war because they brought forth the men and they alone could measure the cruelty of their wanton murder. Perhaps some of the thousands of women who are now fighting want and misery in Europe are thinking it out in that way. But they are doing bravely: they are sowing what they can of the crops, they are doing heavy work of men in factories, they are being forced to produce munitions of war which will make them widows and orphans, and theirs will be the anguish which will be the price of restoration and repopulation. Women should be encouraged to do farming surely, but in an American way.

The Grimness of It.

All the glory is going out of war and that may be a most hopeful sign. The European conflict is a war of silence, such as the world has never seen. It is ghastly murder in the darkness from end to end of it. It is such a desperate struggle that every possible chance of revealing conditions to an enemy is being strenuously prevented. Some idea of the reign of silence which is being enforced can be inferred from the alleged intention of the British war office to reduce letters from soldiers to sweethearts and relatives to mere formal statements, and slips have been prepared which soldiers are urged to use in communicating with those at home. These are tabular statements as to the health of the writer and his general condition. By a mere scratch of a leadpencil a soldier can indicate whether he is well or ill. If ill he may, by another mark, indicate how serious his illness is. No statement as to the locality in which the letter is written will be tolerated, the trooper merely being allowed to mention his army corps. This will surely be another of the many new horrors of war. It is as though a dark, pestilential cloud had settled down upon the world.

The Joy of Americanism.

Evidently we shall learn more about the joy of Americanism and its obligations in a few months than we have discerned hitherto. Many readers will approve the following declarations made in the course of a much longer communication by Jesse W. Lilienthal to the employes of the United Railways, of which he is president:

"I am a great believer in the brotherhood of man. I do not care what a man's race or religion is, or how humble his position in life. Whatever it may be, I feel toward him that he is my equal, and I am always read to treat him as my equal so long as he leads an honest life.

"On the other hand, I do not believe in the foreigners who come to this country simply to make money, and who do not consider it good enough for any other purpose.

"I wish the men to understand my attitude on this question, as I shall probably issue an order before long prohibiting the employment of any man who is not an American citizen, or who has not at least taken out his first papers; that is to say, declared his purpose to become an American citizen.

"The blessings of this country have never been so apparent as at the present time, when almost the whole of the rest of the world is devastated by war and threatened with starvation. And these blessings should be reserved for those who come here to be good Americans, discarding all allegiance except that to the dear old Stars and Stripes."

When it is remembered that the spirit of militarism and disregard of personal rights which caused this conflict is the very thing which many of us or our ancestors fled from, it is not surprising that throughout this great collection of commonwealths the United States, there should be unbroken quiet and loyalty to America. It is probably the most significant rebuke which lingering, out-of-date despotism could plainly receive.

Queries and Replies

Worms in Dried Fruits.

To the Editor: Is there a way to treat, dry and pack figs so that they will keep and not develop worms? I have tried scalding with lye, also salt and lye, and have sulphured some, but to no effect, for I find the fruit I packed first are already getting wormy. I had the same trouble last year. I now appeal to you, as I am a subscriber to your paper, which I think most excellent for Californians.—L. H. C., Chico.

After all eggs are killed by dipping in boiling water or by sulphur fumes, as you suggest, the fruit must be kept out of reach of the fruit-worm moth, or her eggs will start a brood of worms in a very few days. The fruit must be kept in a dark room or house with windows and doors screened and all cracks battened tight so this small moth cannot get in. She will lay her eggs even in the cracks of packed boxes or on filled sacks and the worms will get in as soon as hatched if they can find even minute apertures. Your trouble is not in processing but in subsequent storage.

Beans in Hot Valleys.

To the Editor: Can you tell me why the blossoms all dropped from my bean vines? About the middle of May planted about one-quarter of an acre to small white beans, in sandy red land, and they had plenty of water until Aug. 1st, but will have less than two quarts of beans to harvest. They had plenty of cultivation. Maybe they had too much care. —F. J. S., Reedley.

There is always likely to be trouble with beans setting in the hot valley. Small whites are not usually grown except on river bottoms where conditions are somewhat different. The pink bean is the one which behaves best in dry heat. It is supposed that the lack of setting is due to the effect of the dry heat on the reproductive organs in the flowers. Sometimes beans will fail to set all summer and take hold in the fall as the heat becomes less, but in that case the plants may be caught by frost before maturing.

Over-Growing Pear Tops.

To the Editor: I have just noticed that my Cornice pear trees, planted four years ago, were budded on a slow growing root, or as some people claim, "hide bound." The trees are good and healthy so far. Do you advise splitting the bark between the root and the bud in four or five places and then rubbing soft soap over the whole surface, i. e., between the upper roots where it was budded? All other pear trees are all right: Easter Beaure, Flemish Beauty, Winter Nelis, Fame and Barlett.—G. A. B., Beaumont.

We would slit but not split. Run a sharp knife up or down (not sideways) through the union, to the bark above and below it. This will allow expansion and a better joint. Soft soap may be all right but we would use whitewash.

Nematodes on Melons.

To the Editor: I have one acre of Santa Claus melons, and before the fruit gets to maturity some plants become yellow and several have died. Having dug up one of the diseased plants, I found the root I am sending. Please let me know the cause of this and if I can continue to plant melons on this ground. It is the first year that melons are planted, the land being in prunes and peaches previously.—C. V., Turlock.

The root has microscopic worms called nematodes. They are likely to attack almost any fleshy-rooted vegetable you may put upon the land. If there are only a very few plants lost that way we should dig a hole, put back the diseased roots with a good lot of straw and bake the hole good and plenty. When the crop is off plow up loosely and let the soil bake as dry as possible until the rains come. With such treatment we would run melons another year if they are found profitable. After that we would put in a grain or hay crop and grow the melons on new ground.

Curl-Leaf on the Peach.

To the Editor: What shall I do with my Elberta orchard to keep it from having curl leaf? It is seven years old. I sprayed with lime-sulphur last spring when the trees were about one-third in bloom, but the leaves curled afterwards and most all dropped on some of the trees. They had a nice crop of fruit but the leaves kept dying all summer. I would like to know how to keep it free next year. The orchard was not sprayed in the fall of 1913.—Subscriber, Selma.

The Elberta is a bad curler, when conditions in the spring favor the fungus. Last spring was favorable to it and injury was therefore greater than ordinarily. If you have no scale which calls for lime-sulphur, we should spray thoroughly with Bordeaux when the color is showing a little on the buds, and if the weather keeps cool and moist, spray with Bordeaux again after the fruit has set. Watch closely for signs of curling and then quick work is apt to hold it down. If dry and hot, the first spraying may be all that is necessary if you have the "peach blight," which attacks the young wood during the rainy season. For that, Bordeaux in November is the proper treatment.

Two Cover Crops a Year

Sweet Clovers are Best Winter Cover Under California Conditions, for Plowing and Cultivation in Spring. Buckwheat or Cow Peas Make Good Summer Shade and Humus.

[Written for the PACIFIC RURAL PRESS by J. E. Adamson.]

Time was, when the orchardist who had the hardihood to allow any plant growth between the rows of trees was looked on with suspicion. But those times are past; and it is quite the mode now to plant a cover crop of some kind.

What to plant depends so largely on the kind and depth of the soil and the quantity and frequency of the irrigations, that many are not getting the best results from the money and time spent.

Kinds Tried.—The series has run through several kinds of seed from Canada peas to sweet clover or melilotus which is in so much favor now, and it would seem that there are last, that should have been first, as the melilotus is so much superior to the Canada pea for the purposes of cover crop under the average conditions of moisture in California that it should have had a place from the start.

Canada peas were used almost exclusively in the early work among the orchards of Southern California and seemed to thrive well at first, but within a short time the aphids accumulated to such an extent that it was almost impossible to get a good crop. Too little water would cause them to dwindle and die at the surface of the ground after which they would break off easily and make the task of plowing a serious matter. Too much water would cause the vines to rot and die, much moist weather would cause mildew and an increase of aphids.

Vetch was introduced and its superiority soon made it the leading plant for this purpose. It is hardy, will grow well with a moderate amount of moisture and thrive exceedingly well with plenty of water, while at the same time it is quite resistant to attacks of aphids.

The time of planting has come to be earlier as the years pass. This is due principally to the idea that the plants will grow larger before the early plowing dates.

Moisture Needs.—The greatest objection to the early planting would seem to be the rather weak growth during the warm, dry period in Sept. and the first half of Oct. Some growers use water so that the early growth is helped rather than hindered by the warm weather. One in our neighborhood waters the vetch once a week until the rains come.

It would seem to be the best policy to get the soil wet very thoroughly before the seed is put in and then prepare the wet soil so that it is ready to receive the seed into a bed that will not only be moist enough to give the seed a good start, but will remain mellow enough to let the tender shoots of the growing plant push their way to the sunlight with the least possible resistance.

The Various Wild Clovers are native to our soil and climate, so there is much wider range in the water requirements than with the plants that have been used principally in the past. Most growers found bur clover hard to put under on account of the tendency to tangle, but this is easily overcome by plowing with a sharp disc plow while the soil is wet enough to make it cut instead of allowing the plow to ride over the tangle.

Bur clover does not grow well until near spring, and often has not reached its best growth at the time most growers want to plow in February. But some growers are beginning to doubt whether we must plow so early.

The Melilotus Clovers are also of the native varieties and do well even under the dry conditions of sage brush land in the valleys of the citrus belt. Of course the growth is much better and the final result is much greater if plenty of water is furnished than if they are allowed to go short.

They have a strong tap root which penetrates deeply even in hard soil, and when cut off by the plow, the hole filled with decaying organic matter makes it easy to get water down, and at the same time breaks up the hard soil by the production of humus. I dug a plant of the white melilotus a short time since which weighed five and one-half pounds including the root.

Summer Shade Crop.—Only lately has come into prominence the growth of a summer crop in the orchards of the southern valleys. Buckwheat and cow-peas seem to be the two most in favor, the buckwheat doing best near the coast and rather indifferently in the interior. We have tried both in our orchards at Pomona but have had much the best results from the cow-peas. Using less than an inch of water to five acres has given a growth of vine that covers the ground and holds moisture better than cultivation. It furnishes a large stock of humus forming material which we are now busy getting under the soil. An added advantage is found in the shading of the soil during the hot summer months to conserve the humus instead of burning it out, as where clean culture is practiced.

Where buckwheat can be used it re-seeds itself every eight weeks and will show a fine volunteer growth if watered and disced in, repeating this until frost comes. Neither of these summer crops will stand up under frost and must be grown when there is no danger. We would prefer to get the seed in for the summer crop as early as May and not later than the middle of June, as soon as the ground can be cleared after the winter crop is plowed under.

Protection From Washing.—Cover crops furnish protection for the soil from serious washing during times of heavy rain such as occurred last winter. Damage to orchards would have been almost entirely eliminated had there been more cover crop in evidence. The fact that there was so little cover for the ground came from the tendency to early plowing. One of the worst cases of washing which came to our notice was in an

Cover Crops

You must put back into the soil what is taken out or it will become exhausted. Probably it is already exhausted and in which case we recommend as the best cover crops

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RYE SWEET CLOVER
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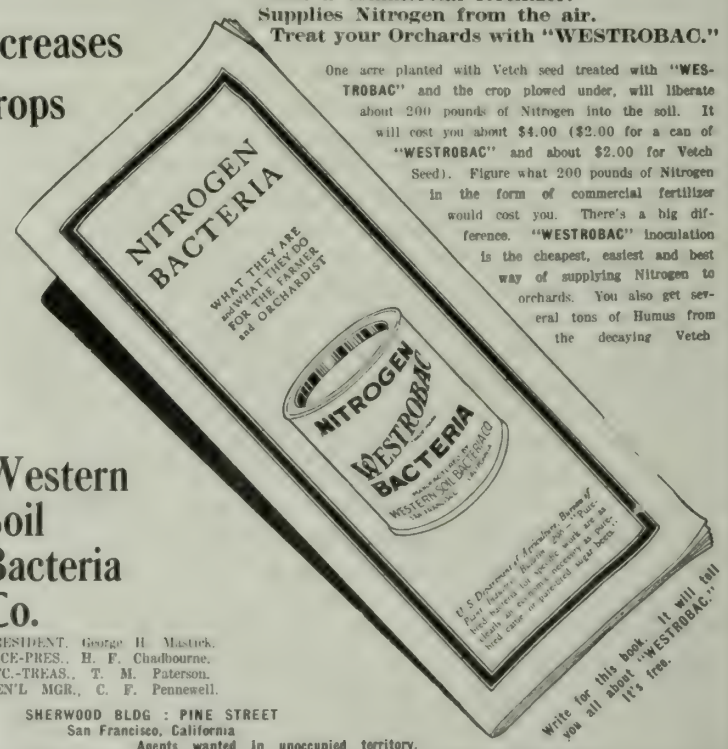

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orchard where plowing had beeen started a few days before the rain, the furrows being run up and down grade. The water found a ready course in which to flow and loose soil easy to cut. In another case several thousand miner's inches of water crossed an unplowed and uncovered walnut orchard and entered a lemon orchard in which was a fine crop of vetch with equal grade in both, the washing in the walnuts was quite serious while there was none in the lemon orchard. In fact there was a considerable absorption of water in the cover crop in spite of the fact that the rain had fallen at the rate of over an inch an hour for several hours. This fact was so universally seen and recognized that there is a most unprecedented demand for seed of the various legumes to the extent of creating quite a shortage and correspondingly high prices. Another result of the lesson of the flood should be to delay the plowing past the danger time for floods. If we must plow, do the first work cross-wise of the grade, which should make the land take water freely in case of an overflow and at the same time offer the minimum chance for damage.

An orange orchard in Los Angeles county is sprayed entirely with whitewash in hope of killing scale, moss, fungus, etc., and to delay ripening of the fruit as well as to sweeten the soil when it washes from the trees. As a citrus cure-all, this is about the limit, but we shall watch the results with keen interest.

DRONE ORCHARD TREES.

To the Editor: I enclose a copy of a recent letter about drone trees, which appeared in The Rural New Yorker. The experience of the writer of this letter in top working drone trees is very interesting to me in its relation to our work along similar lines with the citrus. We have had comparable results to those of the writer of this letter in that we have not failed in a single case as yet to replace drone citrus trees with productive citrus trees by rebudding the drone trees with buds taken from productive types.

A. D. SHAMEL,
U. S. D. A., Riverside.

"Every orchardist has drone trees unless exceptionally fortunate. My own share of them has been more than liberal, and since they are usually one of the uppermost. From six my plan has been to put new tops on them by selecting buds from trees that were satisfactory producers. The method used has been to prune severely in spring and force out a liberal growth of shoots on the stem of the tree. These shoots are budded during the ensuing summer and allowed to start into growth the same season, and continue such growth during the following year. Then the top of the tree is sawed off just above the strongest bud-shoot, which is usually one of the uppermost. From six to a dozen buds are usually put in, and the new shoots are from three to six feet in length when the top is taken off. After that growth is rapid and bearing soon begins. A number of trees on my place—peach, pear, plum, persimmon and pecan—have been treated in this way, and in every instance subsequent fruitage has met expectation. A season seldom passes that one or more trees are not worked in this way. No longer ago than last April a lusty young persimmon and strong growing eight-year-old Mobile pecan were worked with dormant buds, not because they were drones, for they were both exceeding prolific; but their fruitage was inferior. The stems of these trees are now bristling with bud-shoots two to four feet in length, while about one-fourth of the original top is still growing and fruiting above. When taken off next spring those bud-shoots will grow surprisingly fast and new fruits will be expected a season later. Then if the new persimmons and new pecans are not approximately equal in quality to those produced by the mother trees from which the buds were taken, it will be the first failure in a long experience.

"To dig up or cut out a healthy, strong-growing drone tree is a waste. Why, indeed, may they not be budded as readily and with as good results as an ordinary small seedling? The "scientists" who deny this have gone foul on their science. On the drone tree proposition, I am prepared to show the goods in quantity sufficient to convince the most obtuse or incredulous Missourian."

CHARLES L. EDWARDS.
Texas.

[This letter is suggestive to Californians where top working deciduous trees is most common by grafting in winter. Mr. Shamel's successful work in the same direction on citrus fruits shows new opportunities for profitable citrus growing. As noted in our issue of March 28, it is as necessary to weed out the star boarders from citrus orchards as from dairy herds.—Editor.]

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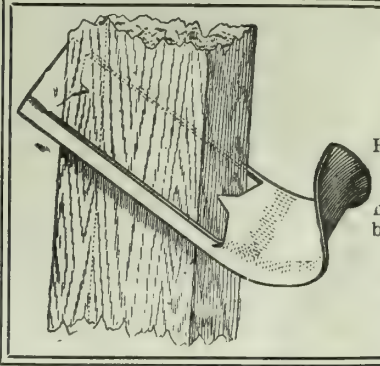

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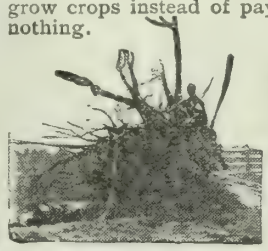

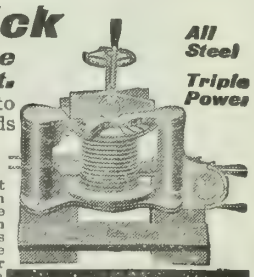

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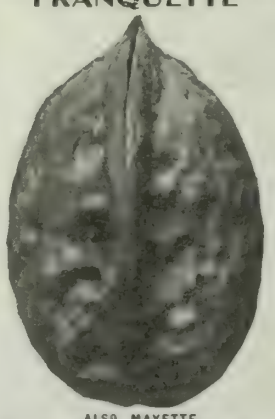

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Calimyrna Fig Packing

[Written for PACIFIC RURAL PRESS.]

"To my wife belongs the credit for the guaranteed Calimyrna fig pack that we put out from our 400 trees," says Fred Hanson of Clovis. "When we came to our little fig and raisin place four years ago, we were offered five cents a pound for the crop. Since Calimyrnas are more trouble to raise than the black or white figs on account of caprification, and since they do not regularly bear such heavy crops, we couldn't see our way out at five cents.

"A neighbor with a big orchard was packing his own figs, so wife insisted that we could as well as he did. We got Roeding's book on fig culture and developed the suggestions we found there, until we and our customers think we have the best fig pack going.

"The foundation basis of our three-year reputation, and one that I can recommend from experience to beginners in fig packing, is the honest pack. Everything in every package is uniform. We guarantee the weight and quality to be as labeled and have not heard a complaint.

"The trouble with most growers is that they hate to throw poor stuff away; but those culls make fine hog meat. The second year the sales of our own pack doubled, and the third year they doubled again. That was last year when we bought five tons to pack in addition to our own crop of three tons.

"We had some trouble working up a market; but never any trouble in holding it. We had difficulty in getting suitable trimmings for the packages, for 'people eat with their eyes.' But the fruit was its own commendation.

"I sold some to grocers in Clovis, and 100 boxes each to Holland and Graff of Fresno. The first year that we packed, I gave a few packages to a friend, who sent some to a lady in the East. She gave some to a broker there, and the broker wanted to know all about them. He got two more packages from the same party, then ordered 25 from me, then ordered 50 more. That was more than I had; but I was glad for that faraway indorsement.

"There are two kinds of packed figs. One is the common "split" kind, in which each fig is cut from blossom to stem and pressed. But the best kind is the "pulled" figs. They are not split, but pulled out flat and thin with the fingers and packed tight without breaking the skin. Only the best ones can be used for this, because it won't do to take any chance with those which might be sour or molded or full of the powdery smut. Our "seconds" are all split. Since the second year, they go out under the Sierra Vista brand, which is stamped on the wooden boxes.

"Last year I packed wooden boxes with figs and layer raisins mixed, about seven pounds net, to sell for $1.25 to the holiday trade. One store took 1000 boxes, and ships them everywhere. I was in that store some time ago when a Japanese bought four boxes to send across the water to his home folks.

"We put up 15-ounce bricks split last year; and I think we will make some pulled bricks this year to sell at higher rates. The Fresno folks took over 1000 of last season's bricks, 300 of which they bought this past June. They also took 500 of our five-pound boxes of pulled figs.

"We had to turn down a great many orders for lack of prime stuff with which to fill them; but we expect a larger pack this year, and wife has tried to break into the San Francisco market. Those folks seem to think that the imported Smyrnas are better than the same thing grown in California; but she sold samples to five people there, and we expect good orders from them."

Mr. Hanson's experience surely shows that there is a strong market waiting to be developed for California-grown Smyrna figs honestly packed on the small home ranch.

H. T. Drake, of the Glorietta Ranch in Fresno county, also claims that his greatest trouble is to produce enough Calimyrna figs to supply the demand, at his unchanging price of 20 cents a pound for the extra fancy (the best grade) and 16 cents for the fancy packed fruit.

Figs for packing purposes are allowed to ripen on the trees and fall to the ground. They are then gathered in big boxes and spread upon raisin trays for curing in the sun. It is poor practice to shake the trees early in the season for this brings too much green fruit to the ground, which cannot be dried or cured to advantage.

While on the trays the fruit is superficially culled and most of the imperfect figs are dried by themselves. These are sold to Eastern manufacturers as cull figs.

After sunning, the trays are stacked for several days, and then the figs are tightly packed in large sweat boxes to allow them to go through the sweating process that they may be uniformly cured. After ten days or two weeks they are put through a machine which grades them according to size.

When packing time comes (this year about October 1, though the figs have been dropping since August 15) they are first washed, then sterilized with steam-heated boiling water, 5 per cent salt solution, to make the skin tender and to soften the figs for packing. Care must be taken at this point not to leave them in the boiling solution too long, as this will cook the fruit and destroy the delicious natural flavor.

The best grade is then handled by experts, who cull out all inferior fruit. The figs then go to the packing tables where they are again subjected to a close examination and culling. The best fruit which is packed as No. 1 or Extra Fancy is therefore subjected to at least four cullings before it is packed.

It is packed in several ways—in five-pond boxes (pulled figs), in one pound cartons, and in 8-ounce bricks.

The fancy or No. 2 fruit is packed in five-pound boxes (pulled figs), in twelve-pound layer boxes and in eight-ounce bricks. The culls from the fancy fruit are packed in 80-pound boxes, as cooking figs.

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503 MARKET STREET

A PLUM THAT CANS WELL.

To the Editor:—I am mailing you samples of a new plum of rather unique qualities. Its merits are that it is an excellent canner and remarkably heavy and good bearer. It is peculiar inasmuch as it never softens up in ripening—never getting much softer than a potato, but in that condition they can finely. They have scarcely any skin and are a tenacious cling, and hold up well in processing. As to parentage I am all at sea, my best guess being that it is a damson seedling. I have fruited this plum for the past 15 years so it is no novelty to me.—Albert F. Etter, Briceland.

(The fruit is just as Mr. Etter describes it. It is rather small, say 1½ by 1¾ inches, dull yellow and its desirability for commercial canning still to be pronounced by one holding that point of view.—Editor.)

LEAF GLANDS AND PEACH ALMOND.

To the Editor: Can you tell me the use of the little glands you find on the leaf stem of cherry at the base of leaf? Also what is the peach-almond root? Is it not a hybrid between peach and almond, or is it an almond only? It is a very strong, thrifty grower.—M. S., Vacaville.

We never heard any philosophy to account for these glands nor to prescribe any functions to them. The only significance we remember as attributed to them is that of Downing who found that peach varieties having leaves without glands are more subject to mildew and perhaps would argue that the presence of stem-glands indicated greater vigor in the variety. As for the peach-almond, it has been observed as occasionally occurring for decades as a chance-hybrid presumably, but Mr. Burbank was, we think, the first to actually produce it intentionally. His experience would seem to demonstrate that it is actually a cross between the two fruits. The strong growth you notice called attention to it many years ago as a desirable stock for the peach but we are not aware that much propagation has actually been done upon it.

TOO CLOSE APPLICATION OF FERTILIZERS.

To the Editor: I bought some commercial fertilizer for my alfalfa. When I planted some rhubarb seed I put in a little in each hill, but in the hills I put it in only a few seed came up. So when I planted some peanuts I put in about a teaspoonful in each hill and mixed it with the ground, but only a few of the hills that I put it in came up. Did I get it too strong? I want to plant some Kaffir corn next year and I thought if it would work to put some of it in the "planter," and if it did not bother the seed that it would perhaps work out in the rows and answer, and be a good deal cheaper than sowing over the whole piece, as only what comes in contact with the corn does the work.—E. L., Winton.

[It is always dangerous to use a quickly-soluble fertilizer in contact with seed, and it is otherwise undesirable. No thrifty plant keeps its roots where the seed starts: they go forth considerable distances after moisture and plant food, and it is wrong to tempt them to stay at home. If, however, you still wish to get right on the spot, mix the fertilizers with several times its bulk of fine sandy loam well pulverized, and it will work on the plants and not get too much in one place. On the whole, however, it is better to get the fertilizer into moist earth between the rows and invite the roots to go after it.—Editor.]

SOUR SAPPED CHERRIES.

To the Editor: About one-third of our cherry trees from one to six years old during the past year have died of "sour sap," four that were six years old have died within the last two months. Kindly advise me if an application of about 1000 lbs. of lime to the acre would be a remedy?—Mrs. A. O. H., Sebastopol.

(Lime won't prevent sour sap but may be needed to correct acidity due to poor drainage which is often the cause of sour sapping. If the trees were located high and dry, they soursapped for lack of circulation due to the killing of most of the tender root hairs by dryness. Sour sap is merely an incident accompanying death from lack of circulation.—Editor.)

A standard of dryness and sweetness for each dried fruit is muchly needed, for incorporation into contracts for the sale of such fruit. Would it be so hard to establish by law? or by rule of the Cured Fruit Association?

If a good way to learn the ethical condition of a community is to find out what they are teaching in the schools, and their amusements, what shall we say of the University of California, and the Fresno District Fair and the town of San Bruno, at all of which places band and orchestra music are furnished for public out-of-doors dancing.

The Use Of Hercules Dynamite On Farm, Orchard and Ranch

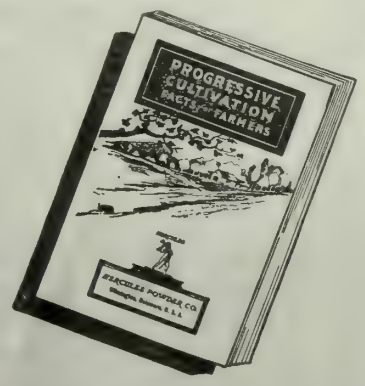
MANY people who are unfamiliar with dynamite have the idea that it is both difficult and dangerous to use.

Relatively speaking, this is not at all the case. Of necessity anything which has great inherent power is dangerous under certain circumstances. The fire in your kitchen stove, the gasoline in your car, the electricity or gas that lights your home—all are in a sense dangerous. You have to be careful with them.

You have to be careful with dynamite too. But this necessary care is a very small price to pay for the almost unlimited benefits derived from it when put to agricultural uses.

It will give you better, stronger trees, finer fruit, bigger crops. It will run ditches, fell trees, lift stumps and rocks, excavate cisterns, cellars, wells, etc. more quickly, more efficiently, and at less expense than the same work can be done by any other means. Yes, that care it requires, is care well invested.

We have published an interesting and instructive book, "Progressive Cultivation." It tells all about dynamite—how to handle it, how to store it, how to use it. You will find it both interesting and instructive reading. Write for a copy. No expense involved.



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How to Prime a Dynamite Cartridge

"Priming" is the inserting of the detonator, whether blasting cap or electric fuse, into the cartridge. When cap and fuse are used, it is first necessary to attach the cap to the fuse.

The fuse should be cut into lengths long enough to reach from the charge when loaded in the hole to at least three or four inches above the surface. One cap is then taken from the cap box by covering all of them, except one, with the box lid or with the hand and allowing the loose one to slip gently into the free hand. Do not try to pick caps out of the box with tweezers, nails, or any hard substances as they are likely to be accidentally exploded. Slip the cap carefully over the end of the fuse, taking care not to push the fuse very hard against the explosive charge loaded in the bottom of the cap and do not twist the cap on the fuse. When the fuse is pushed to the bottom of the cap, make a crimp not more than ¼ inch from the open end of the cap by using a Hercules cap crimper. A glance at the illustration shows you how this is done.

There are two accepted methods of priming dynamite—placing the detonator in the end or in the side of the cartridge. The former is the better way.

When priming in the end, the paper is folded back at one end of the cartridge and a hole made with a wooden punch about the size of a lead pencil or with the straight handle of the crimper into the exposed dynamite. The cap with fuse attached is inserted into this hole and the paper drawn together and tied tightly. The cartridge is then ready for use.

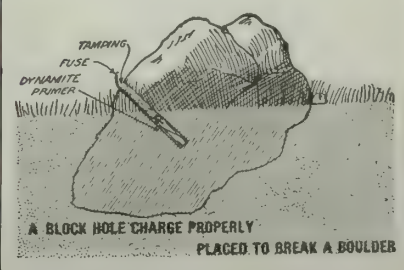
Dynamite Removes Rocks Cheaply and Quickly.

There is but one best way to do anything. The best way to remove rocks or boulders from a field that is to be cultivated is by the use of of Hercules Dynamite. As a matter of fact it is, in many instances, the only way.

There are three accepted methods for rock blasting. It may be done by means of a block hole, a snake hole, or by mud-capping. The first is illustrated here. It is a slower method than either of the other two and is only necessary in cases of very large rocks or boulders.

When it is used, the charge is exploded near the center of the rock, as the illustration shows. When Hercules Dynamite is properly used the rock always goes, no matter what its size.

The other two methods of rock blasting are described in "Progressive Cultivation." Write for your copy.



A BLOCK HOLE CHARGE PROPERLY PLACED TO BREAK A BOULDER

Agriculture First at Central California Fair.

[Written for the PACIFIC RURAL PRESS.]

The test of success of an agricultural fair is quite largely "Has it improved agricultural conditions?" You can't talk to many old-timers in Kings county without hearing something like this: "Stock conditions have improved 100 per cent in the past six or seven years, very largely due to the Central California Fairs held at Hanford by the Kings' County Fair Association."

This is because for thirteen years the object of this oldest of annual fairs in California has been as stated in this year's premium list for the fair Oct. 5 to 10, "to encourage a greater perfection of our agricultural, horticultural and viticultural products . . . and to raise the standard of livestock breeding," with emphasis on the last named phase.

Improvement, however, has been notable along all lines as may be seen from the communication written for the Pacific Rural Press by Edward M. Heermans, Kings county director of publicity.

What the Fair Represents.—On June 30, before harvesting and the crop movement began, the thrifty people of Kings county had in their own banks the snug sum of three million, nine hundred thousand dollars, represented by savings and checking accounts. This sum made an average of about $260 for each man, woman and child of the nineteen thousand inhabitants of a county which this year celebrated its twenty-first birthday anniversary. In 1893, when the county was formed, the deposits were only $375,000.

"There are no manufactories of any consequence in the county of Kings and no mines or timber industries. The thrift and prosperity of the people are the direct results of industry applied to the very productive and well irrigated soil of the region.

Three distinct lines of agriculture form the foundation of all the activity and wealth of Kings county, these being fruit orchards, vineyards, and meadow and grazing lands. The orchards and vineyards represent the oldest industry in the region watered by Kings river and no better testimony to the lasting productiveness of the soil need be cited than the fact that there are vines and fruit trees as old as twenty-one years yielding their best crops this year.

"The story of orchards and vineyards in California is a story that has been written and told so often that the possibilities of these industries are more or less familiar to our people and the eastern people. Deciduous fruits and raisin grapes have taken a place in the markets of the world which has given to central California a pre-eminence undisputed and unchallenged, and from which she will never be dislodged.

"When Kings became a county in 1893 there were eight thousand acres of alfalfa, with a production amounting to $35,000 from dairies and $443,240 from livestock. Last year, and it will be remembered that it was not one of California's best years, the figures showed 50,000 acres in alfalfa which produced $1,600,000 in butter and cream, and feed and $1,220,285 in livestock.

"There is no place for obnoxious boastfulness or odious comparisons in the work of exploiting the resources and advantages of California. The story of each county is a story in itself. There is scarcely a county in the state which does not have a distinct claim of its own to which the attention of the outside may very properly be directed. The spirit of pride which the people of each county take in their development, growth and achievements, is commendable and should be encouraged, for it becomes the spirit of California.

"Therefore, the people of Kings county, who will hold their annual fair next week in Hanford, have a pardonable pride in the showing that will be made by their products—the grains, the vegetables, the fruits, the livestock. But for the soil and climate, providential favors, combined with industry and good management, the fair stalls would be empty; the booths would be vacant; and the grounds would not teem with the throngs which will turn out to see the results of the year's work.

"When alfalfa-growing became an established industry and the benefits took concrete form, the area spread rapidly. The new colored map of the county shows alfalfa extending over fully one-third of the farming area, at once significant and telling. The crops yield enormously, averaging two to two and one-half tons to the acre, and five to seven cuttings each good year.

"There sprang up almost as if by magic, dairies and creameries to handle the output of the dairies. The dairyman rancher is sure of his monthly check, and this steady income of between $150,000 and $200,000 per month has had its effect upon all branches of trade and business.

"The alfalfa rancher has a double source of income; for if he is engaged in dairying, he raises hogs and does it with great profit. The hay crop in most seasons has proven a profitable source of revenue, even the dairyman having some hay to sell in addition to butterfat and hogs. Stock cattle and sheep continue to form an important part of the income of the people of Kings county, because available grazing lands outside of the comfortable fruit and dairy ranches of smaller acreage, supply all-the-year pasture for the stock.

Diversity of Products.—The tourist may see in a day's travel over Kings county as great a diversity of resources as he will see in any part of this great land. An automobile will whirl him through great vineyards which line the highways, bounded on the one side by apricot and peach orchards now bare of their season's crop, and perhaps on the other side by a thrifty tract of Indian or Egyptian corn. Cleaving these ranches here and there are the wide irrigating canals, and a short ride northward will bring the visitor to the banks of Kings river, the source of the water supply which

Exterminate Morning Glory

Johnson Grass, Noxious Weeds and Injurious Insects with NONPAREIL

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums.

Waste no time. Tell us how many acres you want to treat and the crop you are planting. The growing season and not the dormant period is the right time to do the work.

One grower purchased during 1913, $2000.00 worth of "NONPAREIL," has purchased several hundred dollars worth during the month of August this year to finish up odds and ends that were not treated last year. Having experimented for the past four years, he knows what he is doing.

ON SMALL ACREAGES cut away the top of the plant, about four or more inches below the surface. Apply "NONPAREIL" with a squirt can on each root and cover with soil at once, (3 teaspoonsful for each root is sufficient). Keep cans well stoppered as Nonpareil evaporates very easily.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphis, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

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624 California Street. San Francisco, Cal.

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in each four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500%. At Maryland Ex. Station $1.96½ gave $22.11—over 1000%. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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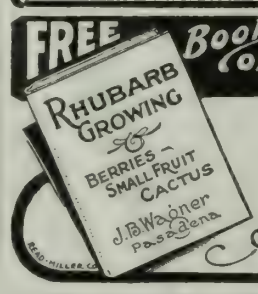

September—October—November are three of the best months we have for planting RHUBARB AND CACTUS
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The Rhubarb-Berry & Cactus Specialist.

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Grown on Sandy Loam Soil

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Almonds on Almond & Peach root.
All Varieties of Fruit Trees for sale.
Write for Special Prices.

Land for sale in large and small tracts on small terms. We plant and care for orchards and guarantee a stand of 95%.

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Grown on Russian River Sandy Loam soil without irrigation are best for several reasons. Our prices are right. We ship subject to approval. Write for price list.

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Price list, describing over 200 species and varieties, mailed free upon request. Upon receipt of 15c in stamps, we will mail you copy of our new Illustrated Catalog. Color plate alone is worth the price.

THE DEAN IRIS GARDENS,
Monsta, California

has made this region so verdant and prolific.

"These sights are broken into by great green alfalfa meadows and pastures, rather improving the panorama because of the pleasing variety they all furnnish to the eye. By the barns are huge haystacks and farther afield are grazing herds—splendid, sleek, contented cows that are contributing to the plethoric bank accounts mentioned previously.

"The trip may be extended north, east, or west, touching now and then prosperous towns and cities, such as Armona, a fruit center with a great canning industry; Lemoore, solid as Gibraltar, backed by grazing, dairy farms, and fruit ranches; Hardwick is one of the new towns that is growing because of the diversity of resources abounding around about, and the center of the alfalfa meal industry; Stratford, a grain market; and on southward the old lake region of Corcoran, the breadbasket of the vast Tulare lake grain country.

"The visitor does not expect to find miles upon miles of wheat, barley, and Egyptian corn in the same county where he had been treated to the sights of fruit orchards, vineyards, and thoroughbred livestock. But there will come out of this grain region this year nine hundred thousand sacks of wheat and barley alone.

"It would be much like breaking this chapter off as the continued stories do, unless the reader was informed about the verdant spots which spring into view in the great wide spaces of this grain region, because of the discovery of abundant fountains beneath the ground's surface. Artesian and pumping wells have made possible the extending of the lines of cultivation and development—the making of a new map of Kings county almost. The future of a region heretofore not counted upon, is now forecasted, and its industrial and commercial history is yet to be written. Corcoran, growing apace, is now the center of this newer dairying region.

. Small Farming.—"Extensive ranch operations are not the rule in Kings county. Forties and eighties prevail and the owners are giving good account of their investments and labors. While it has been established that orchards, vineyards, and alfalfa ranches form the foundation of the prosperity, with grain a more elaborate but perhaps less stable industry, there are the five-acre colonists to be taken into reckoning. On ranches from five to twenty acres in size, these producers are playing an important part in the small fruit, melon, and vegetable supplies which are marketed at home and abroad.

"Added to all these branches of profitable outdoor industries in Kings county are the allied industries of canneries and packing houses; the business of harvesting and curing all of the crops mentioned; the business and commerce that are an outcome of the well tended prolific acres of the husbandman. Then, in addition to all this, there is a variety of pursuits and enterprises just as much a part of agriculture as the greater operations, and fully as prifitable, such as poultry, and kindred industries.

"One of the best signs noticeable in this county that has gone forward so rapidly in its short life as a county, is the spirit of co-operation growing among the producers, and the rapidly increasing spirit of pride in all things pertaining to county development A great interest is being taken in thorougbred livestock. In horses, mules, dairy stock, and hogs, the county will make a showing of thoroughbred and high grades this year, as never before in its history."

Most any little community may have a carnival, but it takes nerve and backbone for a fair association to subordinate amusement features to education and profit

Secretary A. G. Robinson believes in attracting the necessary attendance by making a better fair, by paying higher premiums and attracting more exhibits, rather than by spending the same money on amusement features. Yet the King's county fair feels the pressure of a demand for amusement as evidenced by the doubling of grandstand capacity this year and by condemnation proceedings instituted to buy land for a larger racetrack, though many of the exhibit buildings look anything but modern.

Stockmen generally speak highly of the Central California fair, and 50 per cent of the exhibits have usually been from outside Kings county. Tulare and Kern are always invited to participate, and will exhibit at this fair. But home stock will show up in greater proportion this year through the efforts of the Stock Committee appointed last February to work up exhibits. The Agricultural Committee is said not to push its end so hard because the fruit industry is well established. To see the secretary of the Hanford Chamber of Commerce with shirt sleeves rolled up packing the splendid Phillips clings to have them processed for the Panama-Pacific, is to believe in the horticultural successes of the county. The regret is that such fruit might not be exhibited at home while it is waiting for the World's Fair

Attendance and Support.—Owing to the thinly settled condition of this undeveloped but fertile country, the paid admissions usually number only eight to twelve thousand. The supervisors advanced $1,000 this year and will make up any deficit. No doubt a bigger attendance could be secured by greater use of vaudeville stunts, and more noise could be made in the advertising of the show, but the question as to whether such measures would advance the agriculture of that district is somewhat unsettled.

Certain it is that the State Fair this year taught a lesson that such features may be carried so far as to disgust bona fide agricultural exhibitors. Without exhibitors a fair is likely to be not a fair.

Amusements Minimized.—So Kings county still minimizes amusements as a side issue with a courage worthy of the cause. The directors now responsible for such a policy are M. Bassett, president, W. W. Gallup, A. G. Robinson secretary, E. Gravate, John Troxler, F. E. Newton and L. Y. Montgomery. The supervisors who give them substantial backing are also worthy of much commendation.

Equipment.—A stock company originally bought the present fair grounds, put up the buildings, and built the race track. The county bought the outfit six or seven years ago and furnished them to the Fair Association.

Buildings.—The main hall, 60x120 feet, has an opensided addition for autos 45x120 feet. Back of it is the poultry shed, with plenty of ventilatoin; but the cracks are covered over to prevent drafts. It is 30x110 feet. Back of this are the hog yards, 60 pens about 8x8 each. Among the trees which shade all the grounds, are the dairy sheds with 140 stalls capacity, 50 open horse stalls and 20 box-stalls besides the race horse stables. The machinery shed, 30-x150 feet, is always crowded, the exhibits increasing 15 to 20 per cent every year, and the auto show is always growing. It is planned to replace some of the old buildings next year after the race course has been enlarged.

The milking contest instituted last year drew competitors from a distance to seek honors against the local stock.

Educational features.—A new feature will be the show of cattle, sheep and hogs from California University and the Polytechnic School of San Luis Obispol. Professors from Davis will use the exhibits as object lessons for lectures to be delivered to the general public.

Judging will commence Wednesat 10 a. m., and he who wants to learn may well watch this operation and ask questions.

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buys heavy wood-sawing frame, tilting table, 22 inch circular saw, 2½ H. P. heavy duty distillate engine to operate same. Both new. Cuts 1 cord per hour. Write today.

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Agricultural Review

The Movement for State Wide Standardization of fruit packs either by State law or by such other means as may be devised is to take concrete form at a convention called by the State Horticultural Commissioner to meet at Sacramento October 7. Local standardizing associations will send delegates and the public is welcome. The problems are intricate, but their solution will go far toward insuring profitable staple markets for California fruits.

Record Packs have been made by the fruit canneries of the State, putting the tremendous crop of peaches in a form that will keep for years and probably always be a good price. Apricots and pears have generally come next in quantity. Many canneries have almost canned themselves out of room in which to work since the stocks have not moved very readily on account of the war. Vegetable canning is keeping many of the plants busy and the shipment of goods will provide work nearly to complete the year.

Fresh Fruit Shipments have nearly ceased except for grapes and a few pears and plums. This is earlier than the usual season and about 1500 carloads more have been shipped from California than to this date last year.

Community Effort to control pear blight was discussed at a meeting of pear growers called by the Sacramento Valley Development Association during the State Fair at Sacramento. Pear men along the Sacramento river are taking vigorous measures to clean up the disease, but the efforts of a whole community are vain if one grower refuses to help.

Farm Bureau Meetings are bringing to light many improved practices which might have remained unknown. At a recent Winters meeting, fall irrigation of apricots received a decided boost. Among the experiences was that of T. Devin, who claims that pruning soon after the crop is off and watering directly afterwards has given him five good crops in succession. The Ventura County Farm Bureau recently held a demonstration of lemon pruning by well known growers. Different opinions as to certain principles gave keen interest to the 90 spectators and the discussions exposed a few important ideas hitherto "hidden under a bushel."

Lemon Profits in the Lindsay-Porterville district inspired the planting of a 200-acre orchard at the entrance to Frazier Valley. This, in addition to the transaction by which a Riverside man buys 285 acres of citrus land in this district for $13,000 indicates a hopeful citrus future, in spite of the disruption in the Lindsay Citrus Exchange. A regrettable weakness in co-operation is displayed here if reports are true that several packing houses are going to withdraw because they can't all be pleased with their new manager. Why not consider someone else and save the Exchange? An ordinance to keep the scale insect investigator and fumigation director R. P. Cundiff at work till the end of the season is proposed. This good work of investigation and fumigation must be carried to completion to save the orchards, and there is no doubt that it may easily be done. Meanwhile a packing plant to handle 20 cars of oranges a day is being built at Lindsay. Growing optimism is seen also among Butte county orange growers who are thinking their crop will be earlier and bigger than expected.

Lindsay Olive Growers, having had difficulty in disposing of their crop to packers, as have many other growers' associations this year, joined the Tulare County Growers' Association who have ordered machinery to put up a pickling plant of their own. In the Oroville district a prominent olive grower has long advocated such a step as this, and the Corning people are thinking seriously along this line. Why not a State Federation of olive growers' associations like the Almond Exchange or the Walnut Association? Such an organization could present a united front to opposing interests and put up a few pickling plants of its own if buyers' terms were unsatisfactory.

The Biggest Fig Crop Ever, mostly sold, though not yet packed, is estimated to be in the Fresno section 6,500 tons, sold at an average of about four cents per pound. Fresh figs have been expressed from Placer county to coast points at the rate of a ton a day.

Dates ripen in Imperial valley from July to October or November and are becoming more widespread since the earlier varieties have demonstrated their fitness. The earliest is a new one grown at Indio by the Department of Agriculture. The latest is the Deglet Nur which begins ripening in October and even then has the best of its competition with the Oriental dates which begin to arrive about that time. Plantations have been established at Heber, El Centro, Imperial, Mecca and Indio.

The New $10,000 Almond Shelling plant of the California Almond Growers' Exchange, in Sacramento, employs 25 or 30 people to shell nuts shipped in by locals of the Exchange throughout the State. The Orland section estimates a crop worth $12,600, Chico $125,000, Oakdale six cars, and the Capay valley is shipping a few carloads.

Some Walnut Jobbers are complaining of the prices fixed by the California Walnut Growers' Association Sept. 24, because they fear foreign nuts which would affect the price if exported hither from Europe

PEORIA DRILLS Save Seed Increase Yield

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—who follows a Peoria Drill. There isn't a chance for him to get a bite of grain, for the patented disc shoe deposits it all at the exact depth desired on the bottom of the furrow. Moisture is secured and the wind cannot uncover the seed. Being planted at an even depth, grain germinates and ripens evenly.

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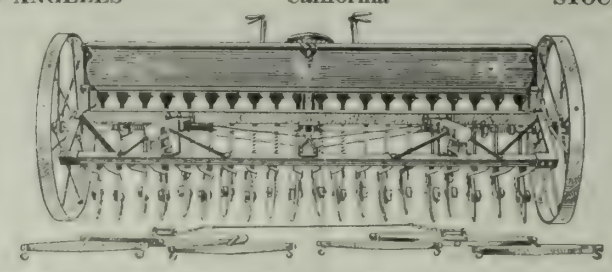

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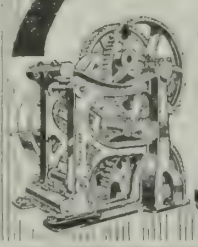

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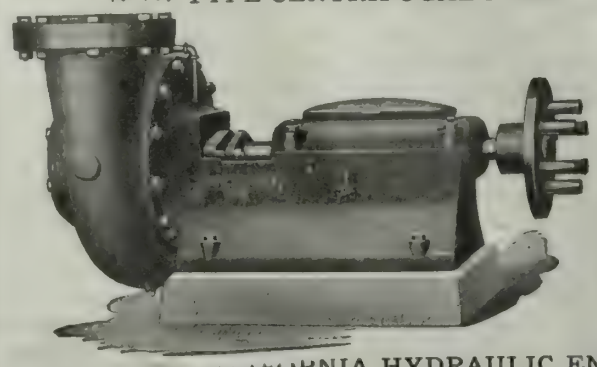

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C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg., San Francisco.

FOR SALE on easy terms. Improved 30 acres irrigated ranch clear. A money-maker. Horses, cows, chickens, alfalfa. O. McQuaid, Manteca, Cal., R. D.

WILL EXCHANGE Irrigated Land for either milk or beef cattle. Land located near Gridley. Address H. S. Hopkins, Live Oak, Cal.

FOR RENT—300 acres of alfalfa land on Dixon Ridge. Abundance of water for irrigation. Apply, J. H. Glide, Dixon, Cal.

TREES AND NURSERY STOCK.

IT WILL PAY you to let me figure with you on large or small plantings of Apples, Pears, Apricots, Prunes, Peaches, Strawberries, Logans, Blacks, Currants, Gooseberries, etc. Send list of requirements. To secure mailing lists, 12 deciduous fruit trees for $2.50—your selection. 100 Strawberries for $1.00. All prepaid. H. A. Hyde, Nurseryman, Watsonville, Cal.

WALNUT TREES—Eureka and Elmonte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

LUTHER BURBANK Spineless Cactus, Fruiting and Forage Varieties. R. Weble, R. 2, Box 119, Santa Rosa.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

MISCELLANEOUS.

FOR SALE—Rumley Toe-Hold Gas Tractor. Fourteen horse power on draw bar. Used 90 days. One John Deere engine plow; four 14-inch bottoms, ten foot double acting, cut-away disc. Engine used 90 days, implements less. All in perfect order. Owner retiring from orcharding. Terms. Box 3, Live Oak, Cal.

REBUILT GAS ENGINES sold for 50 per cent. of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

"SMITH'S PAY THE FREIGHT." To reduce the high cost of livng, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

BULLFROGS—Investigate the possibilities of breeding the BIG Eastern Bullfrog. Unusual opportunity. AQUALIFE, 16, SEYMOUR, CONN.

WANTED.

WANTED—Position as Manager or Superintendent large citrus or deciduous orchard. 20 years experience in California. Development work on large tracts a specialty. Can get results from old orchards. References, any prominent California horticulturist Engaged at present but would consider changing. Would not consider or be interested in small property. Box 315, Rural Press.

SALESMEN—Earn $2000 to $4000 a year.. New Combination, 12 tools in one. Sells at sight to contractors, farmers, teamsters, fence builders, threshers, miners. Weighs 24 pounds, lifts 3 tons. Stretches wire, pulls posts, hoists, etc. Chance for men who want honest money-making proposition. Harrah Manufacturing Co., Box M, Bloomfield, Ind.

FOR RENT—Grain farm, 120 acres, 3 miles from Stockton, macadam road, 7 room house, barn, granery, wagon shed, hog pen, 8 chicken houses, brooder house, sanded yard and corral, wind-mill, tank. Terms, $700.00 per annum, ½ in advance. Wm. A. French, 545 W. Park St., Stockton.

INDUSTRIOUS AND CULTURED young German desires position on modern farm. No wages expected, but opportunity to learn and pleasant surroundings desired. Applicant in good health. Best references. Reply to Room 306, Merchants' National Bank Building, San Francisco.

WANTED—To secure a man who thoroughly understands peach orchard work. Must furnish references. Box 826, Pasadena.

RANCH SUPERINTENDENT is open for engagement. Experienced in working all kinds of labor and in all lines of farming, fruit growing and the care of live stock. Is a worker and is not seeking an easy job. Address, 520 E. Lime ave., Monrovia, Cal.

and Asia. However the nuts are about ready to ship now, while foreign nuts miss our Thanksgiving market at best. The Tribble Nursery Co., which has 162 varieties of cultivated nuts at the State Fair, won first premium on best three varieties of walnuts, first and gold medal on pecans, second on filberts and chestnuts. The winning walnuts were Mayette, Franquette, and Meylan.

The West Coast Potato Association was formed at the Potato Emergency Convention last week to get together every kind of a man on the Pacific coast who is interested in potatoes. Disease eradication by using disease-free seed, by crop rotation, flooding, sorting before sacking, storing sound potatoes away from moths and destroying the diseased ones were recommended. Dr. A. J. Cook was elected president by the approximately 100 charter members, and Wm. Garden is the secretary. Some of the visitors and speakers from beyond the State were Dr. Otto Appel of Germany, Dr. Westerdijk of Holland, Prof. W. A. Orton of U. S. D. A., E. C. Roberts, president of the Oregon State Board of Horticulture, and T. O. Morrison of the Washington State Division of Horticulture. Another meeting addressed by many of the same speakers was held at Berkeley Wednesday and Thursday of this week.

EXTENDING THE GRAPE SEASON.

Last Christmas, in the Placer county foothills, the writer picked and nearly stuffed himself on Tokay grapes that had been left as too green or too small bunches to market.

Charles Willis, of Lodi, has picked delicious second-crop Tokays protected by leaves, in January. The Lodi season usually ends before Thanksgiving, but the prices are better at the holidays.

A fruit grower along the Sacramento river has several orange trees 15 feet high around which he has found it worth while to build a light frame over which he can throw a canvas on cold nights.

Wouldn't it be profitable to reserve a small area of grapes this fall by cutting off the long shoots, building a light framework, and covering them with brush or canvas, perhaps mulching the ground with straw? Possibly such grapes would be of better quality for Christmas than those packed away.

Cyrus: "Well, Seth, an' haow's business?"

Seth: "Pretty bad—as I says tew my ole mule this morning when I was feedin' him. I says: 'It's a good job for yew that yew ain't a camel, fer thet's the last straw.' "

The first Holstein cattle were imported into California in 1871 when three animals were brought from the east Little was known about them

---

An atheist asked the Bishop if he believed that Jonah was swallowed by the whale. "When I go to heaven I will ask Jonah," said his lordship. "But supposing," the other persisted,

---

FIFTH ANNUAL CONVENTION.

The annual California Nurserymens meeting will be held at San Diego week after next. A fine program has been arranged and every member as well as others interested from the north should attend.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

BEES.

BEES AND HONEY—Bee-keeping pays big. Price list bees, instruction books free. Samples and prices pure California honey, ten cents. Spencer Apiaries Co., Box 12, Nordhoff, Cal.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

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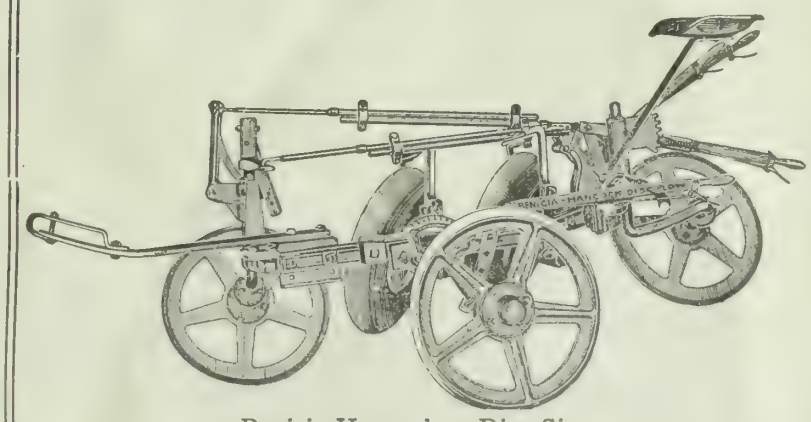
THE PLOW WITH A PEDIGREE

The man behind the hoe selects the livestock after due consideration of its lineage; his plant life, seeds, etc., must have the right genealogy before he buys.

Then why not a plow with a pedigree—the tool that tills the soil that makes the profits.

Benicia-Hancock Plows have advanced from stage to stage—keeping abreast or ahead of the times—and today without question heads the list, and represents the very highest type of plow manufacture.

THE PLOW YOU WILL EVENTUALLY BUY



Benicia-Hancock, 2-Disc Size.

A few exclusive features: Lighter draft than any other; number of discs and size of cut may be increased or diminished as desired; easier of operation, and simple of construction.

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Fertilization under western conditions

Our Service Department has made an exhaustive study of fertilization under western conditions. Every farmer and grower should carefully study his own crop needs. There is a key that will indicate what is the matter with his crop—why the yield is poor or slow in maturity, why the fruit is small and of poor quality. Each type of crop has its own peculiarities and its particular food requirement.

We can and will help you with practical specific information based upon your own specific needs.

Send for our book, "The Care and Feeding of Crops." It costs you nothing and will furnish you with just the information you ought to have. Every day this question of fertilization and fertilizers grows bigger and more important. It makes big successful crops from dismal failures. Write for this book today.

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804 Security Building, San Francisco.

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GAVIOTA Brand Fertilizer

Under this name we have various fertilizers which produce maximum results according to the exact needs of your crops. The value of a fertilizer from the standpoint of results depends upon the quality of the materials of which it is made, as well as the total amount and proportions of the various plant food elements in it. Graviota brand contains the best

THE PACIFIC GUANO & FERTILIZER CO. SAN FRANCISCO, CAL.

Mechanical Power on the Farm.

FARM USES FOR AUTOS.

[Written for PACIFIC RURAL PRESS.]

Every farmer with an automobile visits his neighbors far and wide. He sees how they are doing better than he. If he is awake as his ownership of an auto indicates, he puts better methods into practice. In that way automobiles are competing with farm papers, but we welcome the competition, for prosperity permitting autos breeds more prosperity in the way mentioned.

Among farmers who use autos extensively is the Shore Acre Dairy and Land Co. They have three Fords, a 7-passenger Cadillac, a 6-ton Locomobile truck and a Ranch & Lang electric, the latter for the women folks. With the Fords it is said they attempt great things, such as climbing poles or spectacular stunts similar to the collision at the State Fair. But we warned our folks last week to drive carefully, so we are not responsible for the results of such encounters. R. H. Collins, the manager, lives two or three miles from town, but his children are taken back and forth daily to school. Their chauffeur, Charles Ibberson, hasn't had an accident in the two years he has been driving for Mr. Collins. His motto is: "Pay particular attention to what the other auto driver is going to do, but keep steadily on your own course; never wobble."

The truck is being used to haul tomatoes to the San Lorenzo cannery. In hay season they haul eleven tons of hay per trip with the aid of a 5-ton trailer from their Mt. Eden ranch ten or twelve miles to the dairy near San Leandro, and also from the Irvington ranch 28 miles. According to Ralph Shaver they hauled 21 tons successfully once with two trailers, overloading everything. In canning time, they haul peas about 12 miles to Fruitvale and Oakland canneries, two and three trips per day, and pea vines to the immense silos at the dairy.

With a Holt Caterpillar they plow 25 acres of semi-adobe per day with twelve plows.

On a smaller ranch, J. B. Mendonca prefers to use the horse outfits for the short hauls about the ranch though his son has used an auto for two years, most for traveling and carrying small loads to town. He has an interchangeable body to use for passengers rather than produce.

A friend of the Pacific Rural Press says his theatre bills and perhaps doctor bills have been reduced by the auto, for his family prefers the healthful outdoor riding to the theatres now.

G. E. Merrill, San Jose, acts to some extent as a postman for his neighbors in the hills off from the rural route because he often passes the bunch of mail boxes at the corner on account of the auto. A convenient arrangement of the boxes is described in another place.

But a special use of the machine came in the rush fruit cutting season. He didn't have help enough so he told the manager of an orphan home in town that he would bring seven boys back and forth the eight miles to his ranch every day if they might be allowed to go. The boys were delighted at the chance to be in the country and to earn some money and to stuff on fruit. The round trip sometimes took only 45 minutes.

Pumping with the automobile worked for T. C. Slaughter of Los Angeles county under emergency. He jacked up the auto and ran a belt over the back wheel. In the same way he runs a buzz saw to rip planks and saw wood for the house. Such uses might be extended to the churn, washing machine, etc.

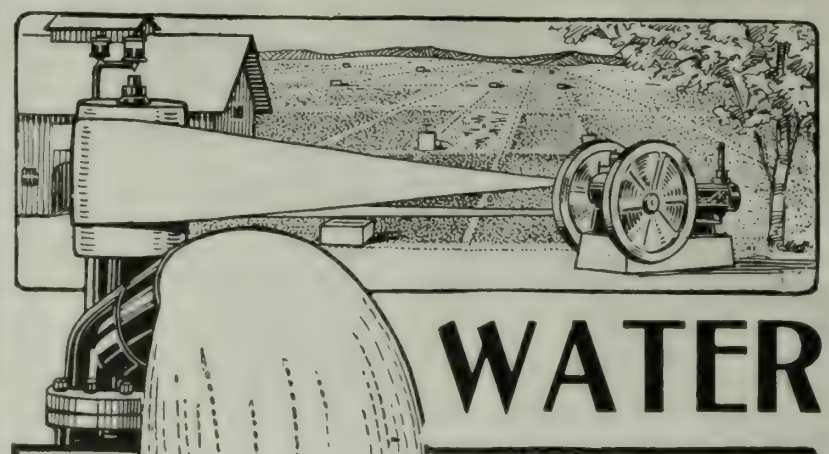
Some time ago one of our correspondents wrote us about using his automobile to kill gophers and ground squirrels. Using a heavy mixture, he jacked the automobile off its rear wheels, he connected the exhaust with the gopher hole by a hose and Messrs. Gopher died.

GIN POLE HAY STACKS.

To the Editor: I have a square pole 6x6 and 35 feet long from which I desire to construct a boom derrick for stacking hay. There is only one in the neighborhood and it is of very poor construction. I would appreciate any help you may be able to give me.—Dixieland, Madera county.

The simplest form would be a leaning "gin pole" with guy ropes. Set the pole on a platform made by nailing a 3x12 plank on top of another, and preventing it from slipping off by fastening wide strapirons a foot or two long on each side by bolts put through holes bored between the planks after they are nailed together. Fill in between the irons with blocks to make the base of the pole fit loosely. Hang a single pulley at the top and one at the bottom so that when the end of the fork rope is tied to the upper end of the pole with the rope running through the fork pulley, back through the one at the top and down through the one at the bottom to the whiffletrees, the rope won't rub any of the wood. The pulleys may be attached by short three-quarter inch ropes wrapped 3 times around and hooking in only the two turns where the pull will come least on the knot and leaving the unused turn on the side away from the direction in which the short rope or "sling" would tend to slip. Be sure you tie no "granny" knots such as are usually confused with the safe "square knot."

A three-quarter or one inch rope about 150 feet long will be needed for the guys. Put a half inch bolt 10 inches long through the pole about six inches below the top and loop the guy rope around the pole in a clove hitch above this so it can't slip down. To make a clove hitch wrap the middle of the rope around the pole twice. Take hold of one of the loops with each of your two hands, leaving about five inches of the center strand between the points at which you grasp the loops. Then put the front loop back of the other, always keeping both loops flat-wise towards you. Put the clove hitch thus made back over the pole and pull the ends till it is tight. They will come out from under the center strand in opposite directions if properly done and you can pull either



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Everyone interested in irrigation should have our illustrated Catalog No. 25. It tells all about this pump. Write for it today.

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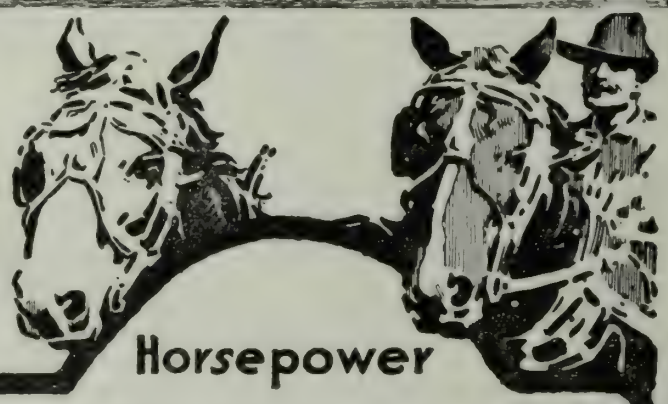

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Your horses can pull bigger loads if you grease your wagons with

MICA AXLE GREASE

Its the mica that does it. It works into the microscropic "roughness" of the spindle and makes a smooth bearing surface, perfectly lubricated, on which the wheel revolves without friction. No hot boxes when Mica Axle Grease is used. A little goes a long way. Ask your dealer for it.

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Give Absolute Control of Water

They are of rugged, massive construction—insuring maximum strength and durability.

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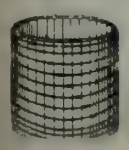


Redwood Tanks
I sell to the consumer. Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon Tanks, Spraying Tanks. Independent.
R. F. WILSON, STOCKTON, CALIFORNIA.

of them as hard as you like without slipping.

Run these guy ropes back toward stakes set solidly 30 or 40 feet apart. Raise the upper end of the pole onto a load of hay and let a man on each guy rope help pull it up until the top leans over the center of the proposed stack and the plank platform runs lengthwise of the stack.

It may be necessary to take a turn or two around the stakes to hold the slack as the pole rises. If the lower pulley on the pole is held by a rope around it, a good block should be bolted with two bolts rather close to the base of the pole to prevent its slipping when the horses pull endwise of the plank as they should do. An eyebolt through the plank a foot from the pole, with the washer on the bottom countersunk would be a good place to hook the lower pulley.

With a little handling, a stack twenty feet long may be built without moving the pole, the wagons being driven up on the opposite side of the stack and the hay fork load dragging up to some extent.

To build another stack alongside just loosen the guys and let the pole lean against the stack while you change them to stakes on the other side of the stack.

To move the pole along, just hitch to the plank and drag it endwise with men at the guys to hold it from falling. One extra guy is quite a help in moving and also minimizes the possibility of tipping the pole over when in use. A more complicated derrick with a boom will be described later.

PROPOSED SAFETY ORDERS.

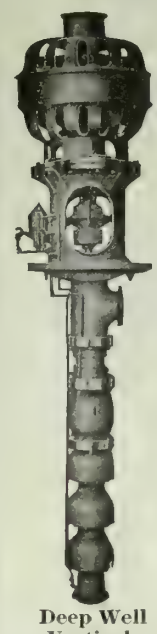
[Written for the PACIFIC RURAL PRESS.]

Safety orders for protection of men working about machinery are to be adopted shortly by the Industrial Accident Commission. A set of "Tentative General Safety Orders" has been printed for use of the Safety Department in public hearings held all over the State. These orders will require the guarding of all belts, gears, pulleys, clutches, shafting, keys and set screws, sprockets, flywheels and moving parts of silage cutters, threshing machines, gas engines, harvesters, etc. A copy of the proposed orders may be had by addressing the Industrial Accident Commission, San Francisco. If there is any objector to any of these orders, he must appear at the public hearings to be held early in October in central California. Such hearings have already been held in the southern part of the State.

The idea of giving public hearings before the orders are made effective is now being used for the first time in California. It allows those directly interested in legislation to help make such laws and has worked admirably in Wisconsin.

MAIL ON BUGGY WHEEL.

Put a smile on the face of your postman as some folks have done in the foothills of Santa Clara county. At a corner where many of them live off the route in the hills, they have set up an old buggy wheel horizontally and put eight boxes on it, all facing outward. The postman can fill the eight without undue reaching and without starting and stopping several times.



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Byron Jackson Iron Works
Stands at the Head as Builders of
High Grade Irrigation Pumps

It is the most efficient pump of this type on the market and the simplest in construction; saves you money, time and worry, and we know you consider this of some consequence and worth while. Write for information and new bulletin showing new construction. We can furnish this pump direct connected to motor or for belt drive. Which will you have?

The BYRON JACKSON IRON WORKS are the oldest and largest builders of Centrifugal and Turbine Pumps on the Pacific Coast.

Our Jackson Catalog No. 47-C is free. Send for one.

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Los Angeles: 212 N. Los Angeles St.
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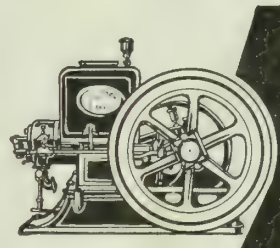

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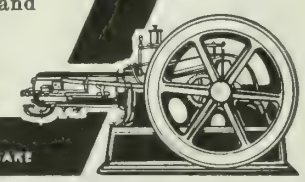

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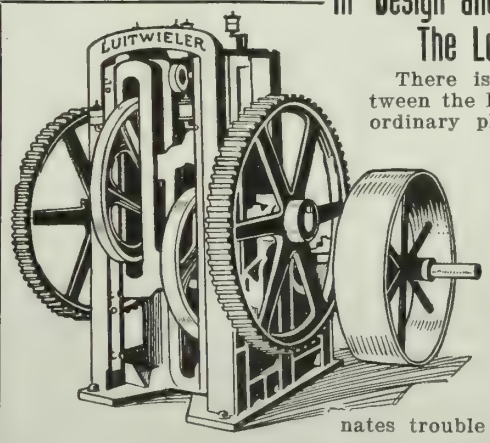

There is as much difference between the LUITWIELER PUMP and ordinary plunger types as there is between a single and an eight cylinder motor.

Ordinary plunger types operate with a fixed radius in action, giving an uneven application, while the LUITWIELER PUMP has cams which give a self-adjusting changing radius, resulting in a perfectly even application. The LUITWIELER requires less power, eliminates trouble and has great efficiency.

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Make $2000.00 more per Year

You Can Make Big Money With a well machine that makes irrigating wells fast and at a low cost. Demand for such wells is unlimited in California and the entire Southwest.
The best and fastest machine for this work and this territory is the
IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE
Bores thru gravel, sand and clay like a streak of lightning. If rock is struck it drills thru that. Forces casings perperfectly. One man and one team can run it. You can make $1 an hour for your spare time.
Write today for catalog and EASY PAYMENT proposition.
LISLE M'F'G CO., Dept. 3, 625 Third St., San Francisco, Cal.

With the Livestock Men

Among those California breeders who exhibited at the Nevada State Fair last week were, Howard Cattle Co., N. H. Locke Co., A. B. Humphrey and J. L. Gish.

Creameries in the lower San Joaquin valley report better prices for cream received during the month of August, the totals paid out by the various creameries being: Kings county, $138,000, Tulare, $74,308 and Fresno, $91,688.32.

In the report of the Fountain City Creamery of Merced, which has just been issued, it is shown that during the last eleven months 297,457 pounds of butter have been made by that concern, which is a considerable gain over last year's production.

The work of constructing the De Laval silos at the Panama-Pacific Exposition grounds was started last week by that company. Plans are being made by the Exposition officials to have silage in sufficient quantities for all those breeders desiring such feed next year.

The newly organized company known as the Carmel Cattle Co. are preparing 4,000 acres at Lost Hills, Fresno county, for alfalfa. Included in the company is James Ogden, formerly with Miller & Lux, it being the intention of the company to make the ranch into one of the finest cattle ranches in the State.

Reports from Elko, Nevada, state that the Western Meat Company do not expect to winter nearly as many sheep in that section this year as is usual, the estimate being that not more than one tenth as many will be handled as last year when the total reached 47,000 head. Only hay will be used this year as grain is considered too high priced.

The cattle market at the Portland Union Stock Yards last week was steady, best steers selling for $6.75 to $7; cows $6 to $6.15; and heifers $6.25 to $6.50. Receipts of hogs were not large, trade being steady with best stuff selling at $8.15 to $8.20. Only a few head of mutton and lambs were offered, which caused a quietness in sheep house business. Choice young lambs reached $6.25, ewes featuring at $4.50.

The prize offered for two cows having the highest yearly record in any California cow-testing association, by the directors of the State Fair, was awarded to T. G. Trigg, of Ferndale, Humboldt county, who also won the $400 prize last year. There was a general feeling among dairymen that this prize money should be cut up into three separate prizes, thereby encouraging more competition.

A representative of one of the largest horse companies in the State is authority for the statement that their opinion has been asked as to whether 2,000 head of army horses could be secured in this and adjoining States, on short notice for supplying the European demand. He states that the chief difficulty in shipping horses from this country is found in the fact that the United States government is afraid of breaking neutrality laws with some of the countries now at war and is for that reason withholding shipments to foreign ports.

While not nearly so large as the livestock exhibits at the State Fair, the showing made of livestock at the Alameda County Fair at Pleasanton last week was highly representative of the different breeds. The following breeders had animals entered for premium money: T. S. Glide, Shorthorn cattle and Shropshire sheep; Bishop Bros. Shropshire sheep; C. B. Cuningham, O. I. C. swine; University of California, general exhibit of dairy cattle, beef cattle, sheep and hogs: R. R. Cartwright, Red Polled cattle; U. G. Strader, Dutch Belted cattle: Blackhawk Stock Ranch, Shire horses, Wm. Bond, Percheron horses.

FISK DISPERSAL SALE.

Just before going to press this week we have received word from Benjamin Rhodes, the well known livestock auctioneer of Los Angeles, that he will have charge of the auction sale to be held at Modesto, October 14, at which time the herd of registered Jerseys owned by W. W. Fisk of Davis, will be dispersed.

Mr. Fisk has leased his ranch near Davis and is compelled to dispose of this stock on short notice, and will not therefore be able to get out any catalogues. However, readers of this paper will remember the story that appeared in these columns during the spring months relative to this herd and intending purchasers will have an opportunity of inspecting pedigrees etc. before the sale. This should be a fine opportunity of securing animals for foundation purposes.

ANNUAL JERSEY BREEDERS' MEETING.

The annual meeting of the California Jersey Breeders' Association was held at the State Fair grounds, Sacramento, September 16, at which time the following officers were elected: G. L. Miller, president, Ralph Watson, vice-president, J. E. Thorpe, secretary, N. H. Locke, treasurer, and Messers. Conant and Maillard directors.

A proposition discussed at the meeting, which is of general interest to Jersey breeders, was the establishing of a new class at the State Fair, providing for a special prize, to be given to California bred Jerseys. Nearly $100 was subscribed by members for premium money to be used in this way, plans for the class having been left with the board of directors for further discussion.

Several new members were elected, making the total membership about 75, which is the largest membership enjoyed by any breed association in the State.

On the evening following the meeting a banquet was given at which time plans for furthering the interests of the Jersey cow were discussed and a general good time provided all those present.

California soil needs more humus and, in many cases, not so much fertilizer.

BUY HOLSTEINS
at the
California Breeders' Consignment Sale
Hanford, October 28, 1914
100 HIGH CLASS ANIMALS 100
Tuberculin Tested
The names of these consignors insure quality:
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JAS. W. McALISTER, JR., SALES MGR., Chino, Calif.
COL. BEN A. RHOADES of Los Angeles, AUCTIONEER

Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

DAIRY CATTLE

FOR SALE—HOLSTEIN-FRIESIAN BULL—Nonesuch Pondyke No. 90771. Born April 20, 1911. Tuberculine tested. Price $350.00 at Alfarata Ranch, Merced, Cal. Address, C. E. Childs, 909 Cowper St., Palo Alto, Cal.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

AYRSHIRES—For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

ROYAL JERSEY HERD offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers & Merchants' National Bank.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal. —High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

I NOW HAVE to offer a limited number of young Holstein bull calves. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

HAVE FOR SALE 35 head Holstein graded milk cows; will exchange for beef stock. Address H. S. Hopkins, Live Oak, Cal.

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WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

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REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

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J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

SWINE

ONE REGISTERED BOAR, 14 months old. Sire Prince Gailliard, head of the Berkshire herd of Hawaiian University College Farm. Price, $50. C. H. Thompson, Novato, Cal.

BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder. "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows, and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

REGISTERED POLAND-CHINA HOGS—Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

BERKSHIRES REGISTERED—Boars and sows ready for delivery, October 1st and 30th. G. Casey, Box 7, King Road, San Jose.

FOR SALE—Young Berkshire sows and boars from registered stock. Brae Bourne Ranch, Route 3, Box 69, Santa Rosa, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

BERKSHIRES—Utility and choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

POLAND-CHINAS. Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

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REGISTERED O. I. C. SWINE—Special sale of young sows. C. D. Conway, Lakeport, Cal.

DUROCS from first-prize winners State Fair, $15.00 up. Ed. E. Johnson, Turlock, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

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MISCELLANEOUS

FOR SALE—Two dapple greys, 5 years old. 1400 lbs. Fine team. 8 head of Shorthorn Durham bulls from 8 to 12 months old. Address, A. Gaul, R 5, Box 71, Stockton, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

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YOUNG TOGGENSBURG MILK GOAT BUCKS.—Prices reasonable. Moulton Harmon, Sonora.

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SMALL C&S CAN
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BETTER BUTTER NEEDED.

From reports from the east it is evident that the need of better grades of butter is being felt there, the same as it has in this State since the introduction of Australian butter in the American markets.

It is generally conceded that the easiest and surest way of competing with the imported article is through the grading of cream by the creameries and while an attempt at this was made by the creamerymen here in this spring the movement seems to have fallen by the wayside.

On this subject E. H. Farrington, head of the University of Wisconsin Dairy School, says:

Much of the Foreign make that is now coming into our markets is a high class product and American butter that is made from sour and tainted cream can not compete with it.

"Cream grading offers one of the easiest and most effective means of improving the quality of butter produced. This is a simple plan by which creameries agree to pay more for high grade cream, sweet and rich, than for that which is thin and sour. When it means money in their pockets, dairymen will bring in their cream often enough so that it will be sweet when it reaches the factory, and with a high class raw product to start with, the creamerymen can make a quality of butter that will compete with the best."

Mr. Farington would have two grades established for cream, the first to be cream having a clean flavor, and containing under a certain percentage of acid and not less than a definite amount of fat; the second grade that having a fair to good flavor and more acid and less fat.

The general adoption of such a system, it is believed would mean a saving of several milion dollars a year to dairymen, for creameries could afford to pay more for butter fat from which they could manufacture "prime" butter.

BITTERS FOR MARAUDING DEER.

To the Editor: I have read quite a bit about different kinds of pests, but have not heard of, nor found, anything that will keep deer from eating the leaves and tender twigs of young fruit trees. Last year I set out 1000 young apple and pear trees and the deer ate the foliage off three times during the season. This last spring I set out 1500 more and the deer went at them about two weeks ago and last week they very nearly cleaned them all up. It is most discouraging. Do you know of anything that we can spray the the foliage to keep them away?—C. F. R., Templeton.

(We have not proved it, but have an idea that a spray which will keep chickens and rabbits from eating leaves will also make them too bitter for deer. Some time ago, W. C. MacFarlane of Hanford wrote us in this way: "Some time since I wrote asking for a remedy to prevent my poultry eating the leaves and bark off the peach trees, and was advised to use a wire screen or quassia chip solution. As I had handled quassia solution on a commercial scale, I felt sure that would answer the purpose, and it did. The fowls would seldom take more than the second bite. I used a spray pump and sprayed it on the lower part of tree and trunk. I made the solution as follows: Quassia chips, two pounds to one gallon of lukewarm water; let this soak forty-eight hours; strain off the liquid and add one-half gallon of fresh water to the chips and boil down to one quart; draw this off and mix with the first water. You have then a solution bitter enough to satisfy the most exacting. This extract is poisonous to flies and insects, but, in small doses, is not harmful to persons."

It would perhaps be easiest to spray with another very bitter stuff, viz: 1 lb. of commercial aloes to 4 gallons of water; mix and spray. Whale oil soap, 1 lb. to 4 gallons of water should disgust any deer which has a nose for perfumes.—Editor.)

FATTENING VEAL ON ALFALFA.

To the Editor: Do you think that it would be profitable to buy calves at veal prices, to be put on alfalfa hay and pasture until old enough to sell for beef? It seems to be impossible to get older cattle. Taking the increased fertility of the soil into consideration, would it not be better to feed the hay if I realized only two dollars per ton for it than to sell it at five dollars a ton? I have 50 tons of hay.—W. D., Visalia.

(With present prices of veal in this State your plan looks feasible, although there is so little experimental data on the subject that no exact figures can be given, so far as we know. We know of several instances where this plan is being worked out this year, and the operators state that they have made money, however they have not been exact enough in their methods to bring out clearly just how much they received for their hay, when fed to young calves. T. S. Glide, of Davis, states that stock can be profitably carried on $6 alfalfa hay. A condition which you do not state and one which is of great importance is, whether the calves are to be purchased from dairymen or from beef cattle raisers. The profits from the latter named kind, if from fairly well bred stock should return you a larger profit than calves from dairy parentage. If any of our readers have had further experience along this line than the above we should be very glad to hear from them as this is a subject which is of exceptional interest to the alfalfa growers of this State at the present time and will, we believe, be of greater importance in the future.—Editor.)

SHEEP SCABIES QUARANTINE.

The only territory remaining under Federal quarantine for sheep scabies consists of the western portion of California, the southeastern portion of California, the southeastern portion of Colorado, and the entire State of Texas.

The result in Utah has been accomplished by an effective State law passed by the Utah legislature in 1913 for the eradication of live stock diseases, and through active co-operation under that law on the part of the State Board of Sheep Commissioners with the United States Department of Agriculture. For over 12 years prior to the passage of the law the State and Federal authorities had been working to eradicate sheep scab from Utah, but with unsatisfactory results.

Doubly Insure Against Drought

By installing a pumping plant equipped with an

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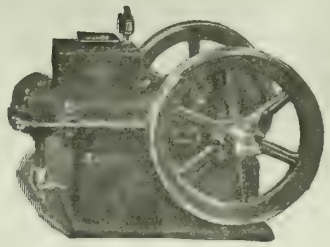
Ideal Green Feed Silo



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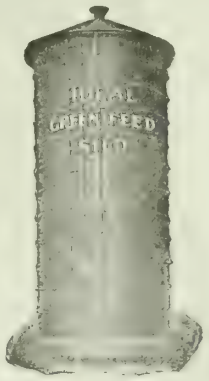

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AUCTION

34--PURE BREED JERSEYS--34

DISPERSAL SALE OF THE

LUCERNE FARM JERSEYS

The owner, Mr. W. W. Fisk, having leased his ranch, is retiring from the breeding business and has moved this herd for convenience of sale to

MODESTO

wheresale will be held

WEDNESDAY, OCTOBER 14th, at 10 A. M.

This will give dairymen and breeders a chance to attend this sale of fine pure bred Jerseys and also attend the State Dairymen's Association meeting which will commence in Modesto the following day.

This herd consists of

19 PURE BRED REGISTERED JERSEY COWS

8 PURE-BRED REGISTERED HEIFERS from one to thirteen months old.

5 PURE BRED REGISTERED BULLS from one to eleven months old.

The two herd bulls

SILVER MARQUIS and NOBLE'S WARDER

The bull, SILVER MARQUIS, is without doubt the best prospect in California. His dam, Golden Marquis Girlie, has a record of 14,000 lbs. of milk in one year with average test of 5.4, thus placing her in the foremost rank as a producer regardless of breed. This record was made with ordinary ranch care. His sire, Golden Marquis of Oakhurst, a grandson of Golden Marquis, now dead, the last living son of the celebrated Golden Lad family. Silver Marquis is now 31 months old, large for his age and has a fine disposition. The sale will include five of his get that are true to form.

The bull, Noble's Warder, which will also be sold at this sale, is one of the best bred on the Coast. His sire, Imp. Noble Boy, was owned by the Hood Farm, and was sired by the great Noble of Oaklands Thus Noble's Warder carries the very best blood and breeders looking for a herd sire could not make a mistake on this bull.

The cows are all young and everyone of them a worker and without a doubt next year, with proper handling, should make remarkable records. The sale includes 12 daughters of Noble's Warder, three of which will be fresh by day of sale.

If large udders and true dairy form count for anything, this stock will surely make good. Herd positively guaranteed free from abortion.

On account of limited time in which to advertise this sale it will be impossible to issue catalog but tabulated pedigrees will be on grounds on day of sale. For any information in regard to this stock write the owner,

W. W. FISK, at Davis, Calif.

Arrangements for credit can be made by furnishing satisfactory bank references.

If you are in the market for highly bred, choice individuals, do not miss this

Genuine Closing Out Sale

THE SALE WILL BE CONDUCTED BY

COL. BEN A. RHOADES

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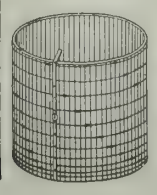

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Veterinary Queries

Answered by Dr. Robert Boyd, San Francisco Veterinary College.

RABIES IN THE DOG.

To the Editor: Can you give me thefollowing information on rabies? How long does it take to develop in a dog bitten by a mad dog? Would it be communicated to pups, littered one hour after the mother was bitten? What are certain symptoms?—F. T., Woodside.

The period of incubation varies between 15 days and two months. This can, however, only be taken as general, as cases are on record of longer and shorter periods. I do not think it would be communicated to pups littered one hour after the mother had been bitten, provided of course they were not subjected to exposure to subsequent infection.

The symptoms are rather liable to be confounded with symptoms of other affections, except by a trained observer, but in general one may say the following are suspicious and where there is a history of a dog having been bitten by a strange dog should be believed with decided suspicion. The first signs of both kinds of rabies (the "drunk" and the "furious") are the same and consist of a change in habit, as a dog inclined to be surly becomes affectionate and a dog of apathetic habits will become more active, but inclined to resort to dark corners, etc. There is no inclination to ferocity in the first stages: however, there is generally an increased nervousness and restlessness at this time. A depraved appetite is almost an invariable symptom at this stage. The voice is changed and has a peculiar note, once heard never forgotten. The popular idea that a dog is afraid of water is fallacious, as there is generally an increased thirst and the animal will drink freely.

MANGE ON FOX TERRIER.

To the Editor: Will you recommend a treatment for mange on a fox terrier? It is just starting on his shoulder, being a spot about as big as a dollar. Would it be advisable to keep him away from the children? —A. W. R., Geyserville.

Apply the following lotion to affected parts, once daily for three days; and on fourth wash with soap and warm water. Lotion: 3 ozs. sublimed sulfur, 4 drams of oil of tar, 2½ ozs. of liquid petroleum. Do not apply to more than one-quarter of the body at a time in any case, but as this is just starting and only in small patches, this warning is scarcely necessary. I would advise you to keep the dog away from the children as I take it you cannot be certain that the affection is mange. Other parasitic diseases, such as ring worm, are easily communicable to the human.

COW, BULL AND HORSE TROUBLES.

To the Editor: Have several problems I should very much like your help on. First, I have a registered Jersey heifer that calved in February. Apparently she cleaned and appeared alright until two months after calving. Bred her twice, commencing about six weeks after she was fresh. About this time she began to throw off an excessive amount of clear mucus, and in the course of a few weeks this changed to yellow and then to a very light brown. She then came in heat about every seven or eight days and later was in at one time for eight days in succession. She also developed into a rider and would follow a cow in heat for a day or more after the cow had gone out. It is my plan to shut up a cow in heat; but after that she would still keep after her. Another peculiarity was after the second time she was bred and before the colored stuff began coming from her she would stand for a cow, but when I turned the bull out to her she would run. She seems in perfect health and milks well. Second: Is there anything one can do to prevent a bull from masturbating? How would one proceed to wash out a bull? Have a young mare on one of my places that has sore shoulders. The man in charge says he uses due care but they remain sore. During the spring work she was green and was worked quite hard and her shoulders would scald. For several months she has done only light work, most of the time, but they will not heal up completely. They will appear to be almost well and then scab off again. Could you give me a formula for a satisfactory cow tonic? Occasionally one of my Jerseys will get dull and refuse to eat and show by her eyes that she is not feeling well. Will also drop off in milk, which is a natural sequence.—W. M. H., Monteco.

The heifer is suffering from leucorrhoea, or catarrhal metritis. The phenomenon of coming in oestrum is from sympathetic irritation and is one of the symptoms of the affection. The treatment consists of irrigations of the uterus twice daily with a mild antiseptic solution such a a mild solution of creolin or potassium permanganate. A general tonic treatment and liberal diet of nutritious food is also indicated. A suitable tonic for such a case would be:

Desiccated iron sulfate 2 ozs., magnesium sulfate 12 ozs., powdered nux vomica 1½ ozs., powdered gentian root 6 ozs., powdered caraway seed 4 ozs.; mix and divide into six powders and give one powder twice daily as a drench with half a pound of molasses and 2 pints of water (warm, not hot).

Your second question, masturbation by a bull: This habit when once acquired is very difficult to stop. A mechanical device such as is used for a stallion can be adapted for use on a bull, but owing to the anatomy of the animal is difficult to keep in position. Exercise and allowing the animal the run of a yard will sometimes help, but, as stated above, the habit when once acquired is difficult to stop. As to washing a bull's sheath, space will not admit to go into any minute detail, but the sheath can be drawn back sufficiently to allow of washing and the operation is to a large extent similar to washing out a stallion. Any fairly intelligent cow man can do the op- to use undue force in drawing down the penis.

As to the mare's shoulders it seems from your description that a fiibroma may have been formed. This would have to be encised before the shoulders can heal properly. Try the following lotion applied twice daily, after thoroughly washing off wounds with castile soap and warm water: Lotion: Powdered zinc sulfate, powdered lead acetate, powdered alum, of each half an ounce, water one pint.

Referring to your last question: when the cattle get as you describe they should first receive a saline purge such as 1 lb. to 2 lbs. of Epsom salts and one ounce powdered ginger

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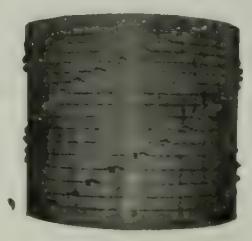

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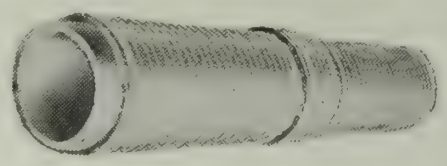

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2400 one and two year old rams and some good ewes for sale. These sheep are pure bred, large and smooth, with heavy fleeces of fine, long, staple, white wool.

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Oak Grove Dairy Farm

H. G. ARMSTRONG, Prop. WOODLAND, CAL.

dissolved in a quart of warm water. Keep feed away until they start to purge out and then feed in small quantities at first. A suitable tonic to follow, if necessary, would be the following: Powdered mustard 6 ounces, powdered ammonia carbonate 6 ounces, powdered nux vomica 1½ ounces, powdered gentian 6 ounces, powdered ginger 6 ounces; mix and divide into six powders and give one powder twice daily in 1 pound of molasses and one quart of water (warm, not hot).

WHY PURE MILK MEANS HIGHER PRICES.

(Continued from page 231.)

of the time, some interpreting the law one way and some another, untill it is often a question whether any of them really know the law or its meaning. Surely where men hired especially for this purpose cannot agree on the law, the dairyman has little hope of pleasing, or of even satisfying the medical boards.

What looks to be the only satisfactory way of overcoming such a condition of affairs, is for the State Dairy Bureau to do all of the inspection work. This would naturally require larger appropriations than that department now receives from the State, but if the money now spent for inspection work, by others than the State, were allowed the bureau, the results would be far more satisfactory, as in that case each city would have th same score card, same inspectors, and the same executive heads, which would greatly facilitate matters from the dairymans standpoint.

Then too it is an admitted fact that the dairy inspectors sent out by the State are doing the dairymen themselves a lot of actual good, as they are men capable of not only bringing the delinquent dairymen into the police courts, which by the way does not promote good fellowship to any great extent, but to a man they act as advisors and are doing a vast lot of educational work which has been noticeably absent in the city inspectors work, who have gone to the dairy with the intention of forcing cleanliness upon the dairyman from a health office standpoint, whether economical conditions were favorable for such cleanliness or not.

Undoubtedly conditions are not what they should be in our milk industry, and anything that will result in putting the business on a sound footing both for the producer and consumer, will be a big step in the right direction. As was shown by many speakers at the meeting the consumer represents the larger number of parties interested, although it is after all the producer who is most interested as he secures his livelihood from the business, and any time conditions are forced on him which will result in financial loss, some other line of endeavor will attract him from the milk field, in which case the consumer is without milk, even though he may have representatives in the field, inspecting to their hearts content.

If, as we have every reason for believing they are, the medical boards and others who have taken it upon themselves to represent the consumers interest are sincere in their statements that they realize educational work is the one big thing, both among producer and consumer, the results of this conference should lead up to a bigger and better dairy industry, in which could be found prosperous and contended consumers and dairymen alike.

This work should not however be left with the city people entirely, no matter how good their intentions may be, for we know from past experience that their judgment along production lines are not always good, and while the dairymens association was not represented as an organization, any measures which may be later taken up for consideration will be submitted to the dairymen for their approval, and with this broad minded condition it seems certain that some definite action, favorable to all parties interested will result.

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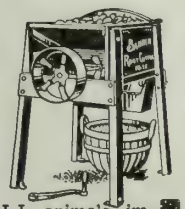
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RYE OR OATS.

To the Editor: Can you give me the best information of which one of these two cereals, rye and black oats grows best on lowland?—M .O. G., Petaluma.

(We can only say that rye is naturally adapted to growth on light soils neither too moist or rich, while oats luxuriate in a moist rich soil and would, therefore, barring the chance of rust, be more likely to meet your requirements.—Editor.)

SAND BURS AND BARE SPOTS IN ALFALFA.

To the Editor: Kindly give me advice how to kill off sand burs in in alfalfa. Is the plow the only salvation or have you another remedy? Also, I would like to know if the Norway white clover, which was mentioned in your Press lately, would do well to sow some spots where alfalfa has not come up to the standard, or where the alfalfa is missing.—C. F. W., Kerman.

(We know of no better way to reduce sand burs than by continued cutting before seed ripens. If you get a good stand of alfalfa and the land is right to keep it, you will not have much trouble with weeds except in the early spring and the mower is the cure for them. We have no confidence that any kind of white clover will catch and hold on where alfalfa fails. By sowing white clover in the fall you might get a winter and spring growth while the alfalfa is waking up, but we should expect the plant to disappear in the summer from any place that alfalfa will not accept.)

What is the use of keeping a cow that costs more than she earns?

Poultry for Profit

[Written for the PACIFIC RURAL PRESS, by Susan Swaysgood, Pomona, Cal.]

SOUTHERN POULTRYMEN'S CO-OPERATION.

Less than three years ago, the poultry breeders of Los Angeles were content to hold an annual poultry show and a meeting once a month. The meeting was of the social order where experiences were exchanged.

Jos. E. Davis, at that time a breeder of White Rocks, and secretary for the breeders' association, saw that the poultry show once a year and these social meetings were not sufficient to hold the poultrymen together, or to make for any especial benefit to the poultrymen in general. Those outside of the fancy were very little benefited at all and so held aloof from the association.

Being a man of discernment he saw also that by co-operation, the old-time poultryman and beginner both could be very materially helped.

He figured that reliable information from practical men, acquainted with the conditions in the city, could be the means of saving very many of the failures that occurred through men being trapped by unscrupulous real estate and other sharks that prey on the unwary. With this end in view, Mr. Davis wrote an article to the Pacific Fancier, stating what he believed could be done by co-operation.

This paper set the poultrymen to thinking, and they held a meeting to discuss the matter. At this meeting the present association had its birth, with just $500 as a nucleus.

This was a very small sum to tackle "big interests" with, but the die was cast; this handful of poultrymen had set the ball rolling into an enemy's camp that could have chipped in and raised a fund of $50,000 in a few minutes to down it. But such is the irony of fate that big interests scoffed at the little business, if they noticed them at all; but they don't now.

The association opened a store at once for the sale of poultry supplies, for handling the eggs of members, etc. They hoped by a strictly fresh article to work up a good class of patronage. The results have proven that people are not willing to pay, nor do they know the difference between what sells as a fresh ranch egg, and the Simon-pure fresh egg. The cost of delivery and other incidentals ate up the profit.

The Association, operating on close margins and handling a great variety of goods turn money over quick. They buy and sell everything the poultryman sells and uses in his business. One department acts as a clearing house for breeding stock; another is the baby chick trade; they have built up a good mail order business, and try to keep efficient help to attend to it and their big home trade.

What Has Been Done.—Before this Association went into business, the local commission men used to pay half price for pullet eggs and dirties. The Association at once commenced to grade up, and has raised both the quality and price of eggs. So far the greatest difficulty it has met has been the short-sighted policy of some of its own members, who for the sake of the present penny are willing to sacrifice the future of the association and their own. But there always has been and always will be people so afraid to trust themselves and their own class of workers that they will give away all they have gained by hard work to somebody with just a little more confidence in themselves; and we never doubt a middleman's self-confidence.

A short time ago, Mr. Davis tells me a prominent commission man made overtures to him for his aid to help "break the market." He said if he could get hold of so many cases of eggs in one day he could break the market and begin to "store eggs," which at the ruling price paid by the association he could not afford to do.

Of course, the help he sought was not given; it would have been a joke for a co-operative association to join in such suicidal competition as that, when its aim was to hold the market up so that its members could live. But that can be said when an individual member for just one cent a dozen more than association prices sells his eggs to this same commission man who was only a few days before trying to "break the market," in which case the member would have been getting about five cents less.

When we consider that this association has prospered in spite of such handicaps as this and many others until now, they are nearing the place where they will be able to control the market themselves it makes us wonder.

Mistakes of an Amateur.—A man who is honest enough to laugh at himself when the laugh is against him, is almost as sincere as the proverbial "hen's teeth." But here is one: "We had an old barn on our back lot, the roof leaked like a sieve and it had plenty of air holes for ventilation, too many for the good of the birds I am afraid. But we bought a trio of Black Langshans and they were duly installed in this model house. We made a run in front of this for the chickens. We thought any old place was good enough for chickens, so that it kept them off our own and our neighbors' gardens. We hatched about 60 chicks the first year and fed them on wet corn meal. Our first big mistake was in trying to raise too many in such small quarters. The few old ones we had 'bossed' the young chicks around like 'much maligned mother-in-law,' eating all the food, and becoming too fat to lay, while they starved the poor little biddies. Many of the latter were naked and the children called them the starved Mexicans. What few had feathers looked as if they had gone through a cyclone backward. In those days we never saw a poultry paper, and did not know that such a thing as lice and mites existed, but we know now. By the time the lice and mites got through we had very few chickens left and we killed most of those that did live. The old hens we kept over winter never laid an egg; how could they under such conditions?

POULTRY BREEDERS' DIRECTORY

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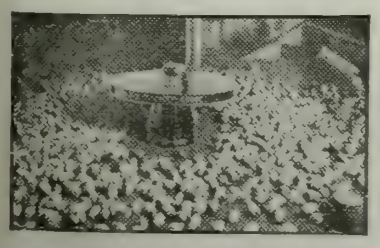

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J. E. KRESKY
PETALUMA, CAL.

Then alas, the roup got in them and thinned them out a little more. And then the feed we gave them,—everything the neighbors donated. There was enough cake and pie to feed several hogs. Green feed we never thought of unless to throw in a few weeds when we weeded the garden. Really we ought to have been arrested for cruelty to animals. But we finally got hold of a poultry paper and learned about grit and such things. We subscribed to a farm paper that ran a poultry department and now we are getting along all right. We read that paper as studiously as ever a little chap read his first primer, and every new thing we found in it the whole family were made acquainted with, so we are all in one class and that is the primary; but some day we hope to graduate from high school with honors."

EGG-LAYING IN PACIFIC STATES.

To the Editor: When I lived in California, I built a poultry house of cedar shingles, both on walls and roof, and I never saw any mites in that house. Here I have one, built of fir boards, and it seems almost impossible to keep it free from mites. Is this only a coincidence, or has the material anything to do with the more or less stubborn presence of the pest? In other words, do the mites not thrive in cedar boards? I manage the poultry exactly as I did in California, but while the hens there always laid about 120 eggs per year, I never get more than 70 or 80 up here, and so far as I have been able to find out, they do no better on other farms. Does this depend on the damper climate and the heavier clay soil that predominates here, or what can be the reason?

I see from the reports from the agricultural college in Oregon, where they have the same climate and other conditions as here, that they get splendid results and even have produced a 300 egg hen. They have, of course, much better stock and give the hens better care and attention than the average farmer does, but why does the average farmer get better results in California than here?

ERNEST SKARSTEDT.
East Sound, Wash.

Comments by Prof. James Dryden, Oregon Agricultural College.

In answer to the enclosed inquiry which you send for answer, I might say that I personally have had no experience with cedar houses in controlling the mite question. I know there is a general opinion abroad that mites will not inhabit a cedar house but I am somewhat skeptical and doubt it very much. Certain kinds of cedar containing considerable oil may be a little repugnant to the mites in their breeding places but I do not think it will keep the house rid of them entirely, or to any great extent. A new house is not so apt to be infested with mites as an old house. They generally breed in dusty corners or cracks and if the house is clean they wouldn't be apt to be so numerous. Oil of cedar has been used with good effect in treating lice on the fowls but I know of no reliable data on the question of cedar houses being an antidote for mites.

In regard to the next point raised in the letter as to whether the hens lay more in California than in the damper climate of Washington or Oregon, I do not think there is any reason for the claim. The fact that the correspondent gets a yield of only 70 to 80 eggs per year in damp sections of Washington, cannot be laid to the wet climate, or at any rate not all of it. It is true that western Oregon and western Washington are favored with more rain in winter than is necessary for heavy production, but the rains are not bad. They are not cold rains and are not very heavy. A great deal of the time during the rainy season the fowls are out doors all the time, paying little attention to the rain. That is, most of the rain comes in drizzles and the fowls don't mind it enough to stay in out of the wet.

One of the main points in securing high production is exercise. Whatever interferes with the busy life of the hen interferes with the egg yield. The hot sun during the day will drive the hen to the shelter and keep her from exercising. So will a heavy rain, and both are not favorable for heavy production. I doubt, however, whether the Washington and Oregon hen does not keep busy hunting in the fields and yards during the winter season more than the California hen does in the summer season. The high records we have secured at this Station were secured under conditions where the hens were out in the rain all the time or as much as they wanted to during the winter, and the fact was that they were out every day, rain or shine, and laid well all winter.

The low production given by the correspondent is more apt to be accounted for by the lack of breeding in the hen. That is, he may have secured a strain that were not good layers and some hens won't lay no matter whether they live in the sunny California climate or in the rainy climate of western Washington, while others that have the breeding will produce eggs in spite of rain or snow or sunshine. There are, of course, other reasons why they don't lay.

His question, "Why does the average farmer get better results in California than here?" I can't answer because I don't know that he does. There are, of course, very favorable sections in California for poultry production. Petaluma, I believe to be one of the favored regions in the way of climate, but good locations can be found in most any county of the country for poultry keeping. It is a question of picking out a location and adapting the methods to the conditions rather than a question of climate.

In summing up the situation, those in a position to know seem to believe there is little or no reason for the farmer to become excited over the European situation, from a horse standpoint.

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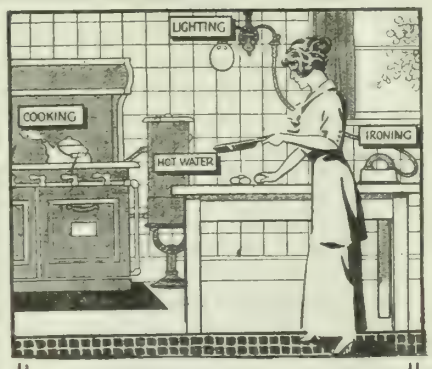

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how was it cooked this morning? And your dinner last night? And all the meals at your home?
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The Home Circle

FALL GARDENS.

For Spring Flowers.—The following seeds should be sown now, for a good crop of spring flowers—antirrhinums (snap dragons), clarkias, candytuft, escholtzias (California poppy), Shirley popies, and poppies in variety; ten week stocks, larkspur, leptosyne, Gypsophila elegans, pansies, saponaria, lychnis (or viscaria), Virginia stocks, Centourea imperials, C. (cornflowers) Emperor William, Calendula (pot marigold), Prince of Orange and Meterior.

The Rose Garden.—Now is the time to attend to your roses. Where the bushes have been dried off during the summer, for winter flowers, all the weak wood should be cut away, and the strong branches cut back heavily, as this treatment will induce longer stems and a better quality of flowers. Such roses should then be watered thoroughly. Should the bushes be expected to produce a crop of bloom, both for winter and spring, it will be found best to cut away only the weak wood entirely, and the stronger growth just enough to balance the plant nicely, and then prune more heavy the latter part of February. Give the soil a good dressing of well-rotted manure and spade under a few inches only, for if spaded too deeply the roots are liable to be injured, and the bushes will need all the root action possible, to develop first-class flowers. A deeper spading may be given in the spring.

Pansy Seed.—A Ventura correspondent asks: "When is the best time for sowing pansy seed, and how to sow and care for same?" The time to sow pansy seed is now. The best plan is to sow in shallow boxes three to four inches deep, not so tight but water can run through bottom. Fill with sandy loam, press soil down gently with you hands or block of wood, sow seed evenly over the surface and cover very lightly with soil. Never allow the surface of the soil to get very dry, neither keep it in a soggy condition. Keep on the shady side of the house and when plants are one-half to one inch across, plant where needed in a rich, pliable loam and keep well watered and manured until well in bloom, when the fertilizer can be withheld. If boxes are not to be had for starting the seeds, a shady spot at the side of the house will do, provided the soil is easily drained. As these plants are for winter and spring flowering they should be planted largely in the sun, though they will flower in almost any locality sooner or later.

It is time now to plant sweet peas for early flowers.

QUINCE MARMALADE.

The two recipes here given were sent in response to a request made some time ago:

Take the amount of quince desired, peel them, and cut in small pieces. Cook in enough water to cover them. When well cooked, run through a collander or seive. Then add the same amount of sugar as fruit, and boil for five or six hours on a slow fire and keep stirring to prevent burning. When well done put in porcelain pans about two or three inches deep. When cold it can be cut in slices. Quinces are also very nice in preserves, and it makes lovely jelly. From a subscriber.

Here is another quince recipt that may be of service, which was sent us by Mrs. C. B. H.:

Quince Honey. — Take one large tart apple to three quinces, pare all and chop fine or run through a meat chopper. Use the same amount of sugar as quince and apple. Let cook thirty minutes. You will find a delicious preserve for the table and one that every one will like.

ABOUT GRAVIES.

There is no point on which the average cook falls so short as in making gravies. It is of the first importance to have all fat removed from the gravy, and, whenever possible, keep bone boilings to use instead of water. The cook should always keep by her a good brown sauce made by burning sugar in a frying-pan, with a little dripping, then adding to it ketchup, vinegar, pepper and salt.

When roasting beef, mutton, pork or any meat which contains much fat, after taking up the joint, pour off all the fat from the dripping pan, then place in the pan a good half pint of stock and any dripping found beneath the fat from a previous roasting. Stand the pan on the top of the stove, dredge in flour, stirring all with an iron spoon till the gravy boils well, then color and season, and strain round the joint. For poultry the gravy should be made by boiling the giblets, gizzard, etc., in a little water. Skim carefully, season and simmer for two hours, then strain and place some of the liquor into the dripping pan when arranging the meat for roasting. Baste the fowl with a little butter and then with the gravy, adding more as it boils away. The gravy should be made quite thick with browned flour, seasoned and boiled over the stove after the poultry is set on a dish. When a good brown sauce is desired for cutlets, etc., it should be made by rubbing a pat of butter into flour till it is very stiff and hard. Place the flour and butter in a stewpan and stir till slightly browned, then add a slice of onion, a little parsley, pepper, salt and a squeeze of lemon. The stock should be added gradually to this till the gravy is the right thickness, then all stirred till boiling. Color and strain before serving. Some cooks forget that to have white sauce at its best, thick white stock and milk in equal proportions should be used, and the whole stirred till it leaves the sides of the pan. A beaten egg or a little cream should be added just before serving; the quantities needed for thickening the above are two ounces of flour to every three ounces of butter. I would here remind my readers that to make stews and hashes of cooked meat the gravy must be thickened and flavored and allowed to grow cold before the meat be added.

A Georgia man applied for a divorce on the ground that his wife "had whipped him in presence of company." The jury granted him a divorce, returning the following verdict: "In the opinion of this here jury the wife committed a grave offense in publicly whipping the plaintiff. She should have taken him into the barn or to a room when whipping was necessary."

On the very first morning of Bobby's visit to grandmamma, he said very politely, but decidedly: "If you please, grandmamma, I don't want nutritious food. I want to eat what I'd rather!"

Isaac: "Oh! Rachel, you vas de light of mine soul!" Rachel (shyly): "Den vy don't you turn down the gas, Isaac?" "Vat, und me a stockholder!"

Utility.—Mother: "Your penwiper has never been used at all." Little Johnny: "Don't need it, my new pants is black."

President Wilson:

"I was most gratified to hear of the nomination of former Mayor James D. Phelan for United States Senator. He has been in close touch with the administration in Washington, and has heartily supported the policies which have been inaugurated for the benefit of the people—

"Therefore, I appeal not only to Democrats, but to all independent citizens to rally to the support of the men who have expressed a willingness to sustain the administration and carry on the work designed for the benefit of all."

Woodrow Wilson

JAMES D. PHELAN

James D. Phelan was three times Mayor of San Francisco

Prevented renewal of franchise of old Geary street railway, San Francisco, thus making present successful municipal line possible.

Appointed first woman who ever held an important public position in San Francisco.

Served as regent of the University of California.

Commissioner to secure re-enactment of the Geary Asiatic Exclusion Law.

Commissioner for Hetch Hetchy legislation before Congress to secure a mountain water supply for the cities around San Francisco Bay.

Commissioner to Europe by appointment of President Wilson to support the United States Government's invitation to foreign countries to participate in the Panama-Pacific Exposition.

Declined ambassadorship to one of the great European nations, preferring service at home.

Led in the fight for a new charter for San Francisco, which insured home rule, civil service reform, responsible government, municipal railroads.

Raised standard of pay for laborers in the city employ.

Head of the San Francisco Relief Committee in the disaster of 1906. Appointed by the President custodian of the relief fund aggregating $10,000,000.

Worked and spoke before the Legislature for the enactment of an anti-alien land ownership law.

Experienced, capable and untrammelled, he would have but one client in Washington, the people of his native State.

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TWO WOOD PILES.

"Ho, hum!" sighed Roy Miller, as he sauntered out to the backyard and stood looking at the wood which had just been drawn into the yard. "That all has to be sawed and split and piled. For once I wish I had an older brother." And he shrugged his shoulders as he started toward the shed for the saw.

Roy was not the only boy in the neighborhood who had to face a pile of wood that afternoon. As he came out from the shed, he noticed that Luke Stafford and James Bent were both at the same kind of work. These two boys lived just across the street from each other, and before Roy went to work he stood and watched them a few minutes.

James was busy piling wood that he had already sawed and split, and it made an even, regular pile that any boy might have been proud of.

"That's the way Jim always works," Roy thought, with an admiring glance at the result of his friend's labors.

Just then the minister passed by the Bents' front gate. "All done but sandpapering, James?" he inquired with a smile.

James blushed at the implied compliment, and answered, "Pretty near, sir."

Just then Roy's attention was attracted by the voice of Luke Stafford across the way. Luke's load of wood had been in the yard for about a week, but none of it was piled; and only a few sticks, lying in a heap beside him, had been sawed. Now he called out in drawling tones, "Maw! how many sticks do you need today?"

The sharp contrast between the two boys that he was watching struck Roy as decidedly comical, and he sat down upon his own load of wood and laughed. Then he picked up the saw, and went to work with a will.

"I may not be able to rival Jim," he said to himself, as he sawed; "but I am bound I won't be like Luke, not if I have to stay up and saw nights!"

When Mrs. Miller came out to call Roy to supper, she looked in surprise at the wood which he had put in order.

"Why, Roy, how much you have done!" she said. "I am glad to see you take hold of your task so well."

"Oh," replied Roy, "I didn't relish the undertaking when I began; but I had an object-lesson which did me good."

"What was that?" asked his mother, looking interested.

"It was the contrast between Jim's and Luke's wood," replied Roy, pointing as he spoke.

And Mrs. Miller, who knew both boys well, looked and laughed; and then she said.—

"I like the choice you made of patterns."

And the pattern proved to be one which lasted Roy all his life. If he was tempted to shirk any task after that, he was sure to hear Luke's lazy tones as he asked, "How many sticks do you need today?"—Julia Darrow Cowes, in Young People's Weekly.

A RIDE IN A CAPE WAGON.

Ned and Chester visited their uncle, who lived on a farm near Cape Town, in South Africa, where he raised sheep and cattle for wool and hides.

There were jolly, black servants at Uncle's farm who taught the boys to hunt and fish and milk the cows and harness the horses or yoke the oxen into the great, clumsy Cape wagon.

One day the boys were huddled with six others into the Cape wagon. Three men and a lot of baggage were on the back end. It took twelve horses to pull the wagon and two servants to drive the horses.

The coach went rocking and plunging and tipping and bumping over sands and rocks and prickly cacti. By and by over it went on its side.

Such a shouting as there was, such a snorting and stamping of horses, such a pulling of people through the back of the wagon.

Ned and Chester were pulled out feet foremost, none the worse for their tumble; and soon the wagon was righted, and jolting merily off toward the vineyards.— Teacher's World.

Dawkins: "I wonder why it is that when a woman throws a stone at anything, she is apt to hit something in an entirely different direction." Jawkins: "That's because she is brought up without any aim in life."

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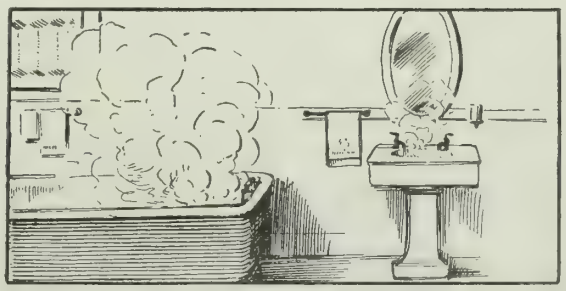

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The Markets.

(Unless otherwise noted prices quoted are f. o. b. San Francisco.)

San Francisco, Sept. 30, 1914.

WHEAT.

Heavy buying for Europe is reported in the north, where the country holdings seem to be cleaning up well, but prices have been inclined to sag for the last two weeks, and the local figures have been reduced. Plenty of wheat is coming in here from the north.

California Club, ctl	$1.77½	@1.82½
Forty-fold	1.80	@1.85
Northern Club	1.75	@1.80
Northern Bluestem	1.95	@2.00
Northern Red	1.75	@1.85

BARLEY.

Local traders have been giving most of their attention to futures this week, and there is little activity in spot barley. Local offerings are not excessive, and there is quite a good export movement, but prices are easing off a little.

Brewing & Shiping	$1.15	@1.20
Choice Feed per ctl	1.10	@1.15
Common Feed	Nominal	

OATS.

Seed grades are in very fair demand, but feed oats are easier, and the white variety is lower, with only a limited demand.

Red Feed	$1.40	@1.50
Seed	1.65	@1.75
Gray	Nominal	
White	1.55	@1.60
Black Seed	1.75	@2.25

CORN.

Eastern yellow again shows a slight decline, neither demand nor supply being very large. Practically all the recent offerings of Manchurian have been taken off the market, and the Argentine, which some holders are quoting at a range of $1.65 to $1.85, is said to be in bad shape.

California Yellow	Nominal	
Eastern Yellow	1.85	@1.95
Eastern White	Nominal	
Egyptian	Nominal	
Milo Maize	Nominal	

RYE.

There is no movement of this grain at present, values being entirely nominal.

Rye, per ctl	1.50	@1.60

BEANS.
(On wharf.)

Heavy crops are reported in practically all California bean districts, and the harvest is going forward rapidly in the valley sections. Shipments from primary points so far have been limited, but are steadily increasing; and while the earlier offerings are meeting with a very good demand, owing to the close clean-up of old stock, there is naturally an all-round drop in prices. With reports that some consuming markets are not buying as freely as usual, some further decline is expected; but the market is naturally rather unsettled at this time, and values are subject to considerable fluctuation.

Bayos: Cal., pr ctl	$3.25	@3.50
Mexican	2.75	@3.00
Blackeyes	3.25	@3.50
Cranberry Beans	3.40	@3.80
Horse Beans	3.25	@3.50
Small Whites	4.25	@4.50
Large White	3.25	@3.40
Limas	5.00	@5.25
Pea	Nominal	
Pink	3.00	@3.25
Red Kidneys	4.00	@4.25
Mexican Red	3.75	@4.00

SEEDS.

There is nothing new in this market, as the fall demand is not yet well under way, though more activity is expected very shortly.

Alfalfa	Nominal	
Brown Mustard, per lb	Nominal	
Canary	Nominal	
Hemp	3½	@4 c
Millet	2¾	@3¼c
Timothy	7½	@8 c
Yellow Mustard	Nominal	

FLOUR.

Local prices are steadily held at the former level, and while business here is rather quiet, there is a fairly large shipping movement from the north.

Cal. Family Extras	$6.60	@7.00
Bakers' Extras	5.50	@6.00

HAY.

The situation shows little change. Arrivals have increased a little this week, and as much difficulty has been experienced as ever in moving the receipts, a good deal of hay having to stand demurrage charges. Shipments on consignment are especially hard to please, and frequently have to be sold below the regular market level. Fancy hay, as usual, finds a ready sale. The market has been helped somewhat by an export movement, and one local firm has taken a large Government contract for Manila. Offerings of alfalfa are increasing.

No. 1 Wheat, or Wheat and Oats	$8.00	@9.00
do No. 2	6.00	@7.50
Tame Oats	7.00	@11.00
Barley	6.00	@8.00
Wild Oats	6.00	@8.00
Alfalfa	6.00	@9.00
Stock Hay	4.50	@5.00
Straw, per bale	30	@45c

FEEDSTUFFS.

Rolled barley is a little easier in sympathy with the whole grain, but otherwise there is on change in values. The movement continues on about the former scale, with little feature to the market.

Alfalfa-Molasses Meal, per ton	$19.00	@20.00
Alfalfa Meal, per ton	13.00	@14.00
Bran, per ton	30.00	@31.00
Oilcake Meal	33.00	@35.00
Cocoanut Cake or Meal	25.50	@26.50
Cracked Corn	42.00	@43.00
Middlings	34.00	@35.00
Rolled Barley	24.50	@25.50
Rolled Oats	32.00	@33.00
Shorts	33.00	@34.00

VEGETABLES.

Some lines of summer vegetables are appearing in smaller quantities, but in a number of seasonable lines the offerings have been excessive, resulting in extremely low prices. This is true especially of tomatoes, with which the market has been badly congested, and which have sold as low as 10c per box. Celery is now coming forward more freely, with a further decline, and okra is considerably lower. Green corn dragged a little during the week, but is now firm at the last quotations, with light shipments from the principal districts. Cucumbers are slightly higher, and all kinds of beans are doing better than last week, while chili peppers have been marked up sharply.

Green Peppers, bell lugs	30	@40c
Green Peppers, Chili	50	@65c
Carrots, per sack	35	@50c
Green Peas, lb.	5	@6c
Tomatoes: Delta, lugs	10	@25c
Beans: Wax, per lb	1½	@2½c
String	1½	@2½c
Lima	2	@2½c
Cucumbers, lugs	25	@40c
Eggplant, lugs	25	@40c
Green corn, sack	1.00	@2.00
Summer Squash, box	25	@35c
Cream Squash, box		35c
Okra, box	25	@40c
Celery, doz	15	@30c

POTATOES AND ONIONS.

Except for the offering of Salinas potatoes, which are steadily held at an advance over the river stock, there is nothing new in this line. Growers in the Delta are sending out large quantities, and with increasing supplies in other markets it is difficult to effect large sales. Onions are said to be a little more in demand, owing to the approach of winter, but have not improved in price.

Potatoes:		
Salinas, ctl	1.40	@1.60
River Burbanks, ctl.	70c	@$1.00
Sweet Potatoes, ctl.	1.40	@1.50
Onions, Yellow, sack	40	@50c
Garlic, Cal., per lb	10	@12½c
do. Oregon	10	@15c

POULTRY.

Offerings of both local and eastern chickens are rather large this week, causing a much easier feeling in several lines, though choice broilers are not plentiful, and have been marked up. Hens, however, are weak, and young roosters are quoted lower. Squabs show an advance. Turkeys are not moving very freely, and are lower.

Turkeys, old, per lb	19	@20 c
Turkeys, young, per lb	23	@24 c
Large Broilers	23	@24 c
Small Broilers, per lb	23	@24 c
Fryers, per lb	20	@21 c
Hens, extra, per lb	17	@18 c
Hens, large, per lb	18	@19 c
Small Hens, per lb	15	@16 c
Young Roosters, per lb	18	@20 c
Squabs, per doz	2.00	@2.50
Geese, per pair	2.00	@3.00
Ducks, doz	4.50	@8.00

BUTTER.

Prices for extras have been inclined to drag all week, and while the market has now picked up a little, there is no real firmness, as arrivals from several producing districts are keeping up, and there is practically no outside demand.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	29	28	28	28	28½	29
Prime	27	27	27	27	27	27
Firsts	25	25	25	25	25	26

EGGS.

The upward movement seems to have been checked for the time being, the present quotation being 3c below that of a week ago. This is due to rather large offerings from primary points for the week, but higher prices are expected.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	43½	41	41	41	41	41½
Selected Pullets	32½	32½	32	33	32½	32½

CHEESE.

Flats have been offered freely this week, and prices have dropped. Y. A.s, however, are steadily held at the old quotation, and Monterey cheese is higher, the two latter varieties finding a good demand.

Fancy Calif. Flats, per lb	13	c
New Young Americas, fancy	15½	c
Monterey Cheese	15½ @16	c

Butter:	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	26	26	26	27	27	27
Eggs	36	35	36	36	36	36
Cal. Chees	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

The principal new feature in the market is the arrival of the first Cape Cod cranberries. Eastern advices report the crop 8 to 12 per cent above last year. Other berries are easy, huckleberries being marked down 1c., while raspberries are considerably lower, on large arrivals. There is nothing new in apples, which are arriving freely and find no extraordinary demand; though the apple annual in San Francisco this week may stimulate the local consumption. Choice wrapped Bartlett pears are higher, as the crop is about all in. Peaches in lugs are also higher, with lighter offerings; while small boxes are still selling within the former wide range of values. Plums and prunes show little change. Malaga grapes are lower, and other lines are offered liberally, though the prices are pretty well maintained.

Cranberries, bbl	$6.75	@7.25
Huckleberries, lb	5	@7c
Strawberries, chest	1.50	@3.00
Raspberries, chest	3.00	@5.00
Apples, New Crop:		
Belleflowers	65	@75c
Spitzenberg	65	@90c
Gravenstein	50	@1.00
Crabapples	40	@85c
Quinces, box	75	@1.00
Nectarines, crate	75	@1.00
Pears, box, large	1.25	@2.00
do No. 2	50	@75c
Winter Nellis	75c	@1.00
Peaches, lugs	30	@65c
do, small box	25	@80c
Plums, crate	75	@1.25
do, lugs	75	@1.25
Prunes, lugs	75	@1.25
Figs: Black, double layer	50	@65c
White, single, layer	25	@40c
Pomegranates, box	50	@1.00
Persimmons, box	1.00	@1.25
Cantaloupes, crate	75	@1.25
Watermelons, doz	75	@1.50
Casabas, lugs	50	@75c
Grapes: Malagas, crate	35	@50c
Tokays, crate	40	@60c
Seedless, crate	40	@50c
Muscat, crate	50	@60c
Black	25	@40c

DRIED FRUITS.

The movement in the country has been rather large for the last few weeks, but the market is quieting down again in most lines, as buyers in the east are working on a very conservative basis. With a large output of apples, this fruit shows a further decline. Considerable business has been done in apricots at the inside figure, as many growers are getting anxious to sell, and the absence of expert business of an important nature does not promise well for future values. Prunes are in a very strong statistical position, and local values are steady as now quoted, though offerings of French stock have caused uneasiness in the eastern market. Peaches get very little attention, and it is not easy to effect sales even at the prices quoted. Pears are rather firmly held, and some fancy stock is said to bring as high as 8c. Apparently strong efforts are being made in the east to throw the raisin market into confusion, and a light business is reported there, though there appears to be a large movement at this end, and prices here are firmly maintained. The New York Journal of Commerce says:

Perhaps the most important development is the attack made by French shippers on the Prune market. Offerings were made for shipment from France at a delivered price fully a cent under quotations made by California shippers to the Eastern trade. The French goods are offered at a flat price on the different sizes, French equivalent of American count, of 9¼c for 40s, 7½c for 50s, 6¾c for 60s, 5½c for 80s and 4¾c for 90s f. o. b. duty paid New York. The offerings from France seem to have surprised handlers of California fruit. The market for the latter is unsettled. While a 5⅜c f. o. b. bulk basis represents the lowest open price made by packers on 40s to 60s, it is said in the trade that a firm offer of 5¼c base would probably be accepted in some quarters. However, most coast shippers are still holding for a 5½c f. o b. four size bulk basis, though they appear to be getting little support from orders or even inquiries from this end.

Evap, Apples, 1914	4	@5 c
Apricots, 1914	6	@9 c
Figs: White, 1914		4 c
Black	2½	@2¾c
Calimyrna, 1914		5 c
Prunes, 4-size basis, 1914	5	@6 c
Peaches, new	3	@4 c
Pears	6	@8 c
Raisins (in sweatbox):		
Loose Muscatels	4	@4½c
Thompson Seedless	5	@6 c
Seedless Sultanas		5 c

There appears to be no demand for Apricots or Peaches from the trade in this section. Prices are nominal and the market has an easy undertone. Since the announcement of the advance in prices by the Associated Company on new crop loose and selected Muscatel Raisins, little business has been done for shipment to Eastern markets, though it is understood that buyers in this section have not yet provided for normal fall requirements. Independent packers are said to have been active in the growers' field, and have secured quite a considerable quantity of goods from growers at prices lower than those paid by the Associated Company and it is for this reason that buyers are holding off, hoping to eventually cover their requirements at less than the so-called official quotations, not only in muscatels but in Thompsons and sultanas. Whether they will be able to get what they want at their ideas of prices is, in the opinion of well posted authorities, a question that is open to doubt.

CITRUS FRUITS

The eastern demand for Valencia oranges seems to be increasing and prices are advancing. Lemons are also picking up. It is estimated that there are about 2,000 cars of oranges of this season's crop yet to market. Porterville reports the new crop to be ahead of the usual time—some of the early oranges being already well colored.

On the New York auction, Monday, Sept. 28th, 21 cars were sold at prices averaging from $1.60 to $3.65

per box for oranges, and $3.80 to $4.25 for lemons. The other eastern auctions paid about the same prices as New York. Shipments of oranges from Southern California for the season to Sept. 27th, were 37,004 cars as against 13,270 to same date last season.

Values in all lines remain as last quoted. The San Francisco movement of oranges is limited, and lemons seem to have lost all their firmness of a few weeks ago, owing to the renewal of liberal shipments of foreign goods into the eastern markets.

Oranges:	
Valencias, box	$1.25@ 2.25
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, bx	1.00@ 2.50
Lemons, box	2.00@ 5.00
Limes, case	Nominal

NUTS.

The Southern Walnut Association has given out prices on the new crop, as quoted below, and a heavy business has been done at these figures as dealers expect some difficulty in getting foreign supplies. Almonds are still being shipped out, but are less active than they have been, and independent dealers report difficulty in effecting sales at Association prices. For example, it is said that about the best figures they can make on IXL's is 16c. in the country.

(Association prices.)

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
No. 1 Hardshell	Nominal
Budded	20 c
No. 2	12 c

HONEY.

The situation shows little change. Fancy comb honey is extremely scarce, and would sell about up to the top figures quoted, but for most grades there is not much demand, and there are still fairly large offerings in the country.

Comb: White	12 @14 c
Amber	8 @10 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off grades	3 @ 4 c

BEESWAX.

Offerings are increasing, and there is an easier feeling as to values, with very little demand at the moment. Prices, however, are not quotably lower.

Prices are quoted as before, but there is very little demand here.

Light	32 @32½c
Dark	27½@31 c

WOOL.

It is impossible to get any definite figures on fall wool in this state, as dealers are still uncertain in regard to values, and there is very little business in progress. Reports from eastern markets, however, are rather encouraging.

Fall clip	Nominal

HOPS.

Few sales have been reported this week, as there still seems to be some uncertainty as to values; but a larger movement is expected very soon, and some business is being closed within the present range of quotations; the higher figures being for Sonoma and Mendocino stock.

1913 crop	16 @20 c
1914 crop	16 @20 c

LIVE STOCK.

(Delivered San Francisco.)

There is little change in the situation this week. The trade is now fairly well supplied with beef cattle, and while growers are firm in their views, business in the country is reported light. Offerings of calves, sheep and lambs are light, with a consequent firm tendency in values; while hogs are coming in freely and rather easy as to prices.

Steers: No. 1	6¾@ 7 c
No. 2	6½@ 6¾c
Cows and Heifers: No .1	5¾@ 6¼c
No. 2	5¼@ 5½c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½@ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	
250 to 350 lbs	9 c
125 to 250 lbs	9½c
Prime Wethers	5¼@ 5¾c
Prime Wethers	5 @ 5½c
Ewes	4½@ 5 c
Milk Lambs	6½@ 6¾c

HORSES.

Very little new stock is coming in this week, and the offerings that appeared earlier in the month seem to have been a little too much for the market, at least of the classes of stock offered. There is always some demand for heavy drafters, but interest in lighter stock is hardly up to expectations.

Heavy drafters, 1700 lbs. and over	$225@275
Light drafters, 1500 to 1650	200@215
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	60@100
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

DRESSED MEATS.

Steers	11¼@11¾c
Heifers	10¾@11¼c
Veal, large	13½@14 c
Small	15 @15½c
Mutton: Wethers	11 @12 c
Ewes	10 @11 c
Suckling Lambs	13 @13½c
Dressed Hogs	15 c

SPECIAL DECIDUOUS MARKET REPORT.

By J. L. Nagle.

The deplorable condition of the Tokay market throughout the east is due to many causes, principally from the excessive shipments and secondly from the fact that there is an enormous tonnage of eastern grapes being thrown upon the markets that early in the season had been contracted for by the grape juice factories. On account of the European markets being closed, due to the war, the grape juice factories have found it necessary to cancel their contracts in this country, with the result that only a small percentage of grapes are being made into juice. Fully 20,000 cars of eastern home-grown grapes are being thrown upon the markets in competition with California Malagas and Tokays; but even in the face of this enormous tonnage the markets on Tokays would have remained steady had not the shipments been unjustifiably heavy in the San Joaquin Valley. Many of the packing houses have shut down for a week or ten days, hoping that the market will clean up, but in our judgment the damage has been done, and now that the Almerias are coming in in heavy supply, we do not look for very much activity on Tokays until the latter part of the season. It is estimated that fully 75 per cent has been shipped.

There is quite a demand for late pears as new markets have been opened in South America for fall varieties, which heretofore have been exported to Europe.

There is little or no demand for apples, due in a great measure to the inactivity of business in general, heavy supply of home-grown eastern fruits and the fact that it is rumored there is an enormous apple crop throughout the country.

The markets for the past week ranged as follows:

New York: Bartletts $2.86 to $3; B. Hardy $1.90 to $2; Malagas 60c to $1; Tokays 71c to $1.25. Sold Friday first shipment of Almeria grapes from Spain, 13,000 barrels, quality irregular; no extra fancy or fancy stock. Extra choice stock sold from from $3 to $3.75; choice $2.25 to $2.75; few heavy weights extra choice $4 to $4.25; poor, wasty stock 75c to $2.

Chicago: Thompson Seedless $1.09; Malagas 75c to $1.15; Tokays 65c to $1.05.

Boston: Bartletts $1.85 to $3.25; B. Hardy, $1.90 to $2.30; Thompson Seedless 85c; Malagas 85c to $1.05; Tokays 65c to $1.20.

Philadelphia: Tokays 65c to $1.25; Malagas 80c to $1; Cornichons $1 to $1.10; Muscats 80c to $1.

Total deciduous fruit shipments this season to Sept. 29th were 11,905 cars, as against 10,247 cars to same date last year.

Publisher's Department.

Business is good at the **Pacific Rural Press** office. The paper this week speaks for itself as to the advertising offered. New subscriptions to the number of 256 were received during the past week, and in our book department orders are coming in large numbers.

At this season of the year the book "California Fruits" leads the others in sales, although "California Vegetables" has many demands. Our new book "One Thousand Questions Answered" has sold at a very gratifying rate since the first of the year. The book end of our publishing business is proving to be very satisfactory—so much so, that we expect to publish two new ones this fall. One will be on floriculture and the other will cover the poultry subject. Further announcements of these books will be made very soon.

To many of our new readers the announcements of our advertisers will open new channels of trade. Of course our old time subscribers have already learned that our advertising columns are worth reading because these firms are reliable and they have something to offer of advantage to our readers. We would urge all to get the habit of reading the business announcements in our columns.

BISULPHIDE AND BEAN WEEVILS.

To the Editor: Is the bisulphide of carbon treatment for weevil in beans and peas, as published in your columns last year, harmless for those intended to be eaten, or was it only for those intended for seed? And should it be done just as soon as the beans or peas are gathered? What would be the approximate cost of this treatment? We enjoy the Rural Press very much.—E. H. Parnell, Sebastopol.

[It is perfectly harmless even for dried fruits and other things which are to be eaten, because it entirely evaporates and leaves not a trace even of its odor. It should be used as soon as the seed is gathered as dry seed. Write to the manufacturers for methods of application and estimate of cost.—Editor.]

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THE PACIFIC RURAL PRESS

Vol. LXXXVIII—No. 15 San Francisco, Saturday, October 10, 1914 Forty-fourth Year

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Watering Prunes Now For Next Crop.

[Written for PACIFIC RURAL PRESS.]

When you ride down the railroad through Santa Clara Valley at this season, you begin to think of the decadence of the prune industry. But when you get away from the railroad into certain sections, your faith revives. Not all of the effect of the two dry years showed their effect until this year when in spite of the rains of last winter, the heavy bloom of prunes all over the State failed to set a crop that would mature.

Cause of Heavy Drop.—Why there was such a heavy drop of unpollenized pea-sized prunes last spring was explained partially in various ways, such as frost, hot weather and winds at blooming time, and weakness of fruit buds.

That the last-named reason is most basic and probably the most effective in reducing this year's prune crop to an estimated 85,000,000 for the whole State, is evidenced by the growing number of people with healthy looking prune orchards, who have been irrigating early this October.

Prune orchards bloomed like these last spring in Santa Clara Valley. If ten per cent of the flowers had matured fruit, the trees would have been overloaded. Many growers aim to avoid excessive dropping of fruit next spring. They are irrigating now to strengthen the fruit buds.

One Who Has Learned.—Mrs. E. McLeod, who came to Santa Clara Valley in 1878 with $1,000 and is now the owner of eighty-six acres, mostly of prunes, worth between $600 and $1,000 an acre, is one of these. Knowing nothing of prune culture in 1878 she has become a widely recognized authority on the strength of her success. As she says, "I've worked harder and longer than any common man works now; I've done every conceivable work to be done on an orchard, and not only a little of everything, but a lot of everything."

She herself planted every tree on the 50-acre home place, except the few filled in of late years. "I know every tree like I know my own children," she says, "for they've grown up with me and I've tended them with my own hands."

October Rains Help Crops.—As the years passed by before her irrigation system was installed, she n[illegible] the years of October rains heavy enough to go into the ground were followed by plentiful crops. She irrigates now to make sure, and her orchard is one of those that speak encouragement for prune-growing. Most of the orchards seen from the train and already looking so wintry have simply lacked water, especially after the crop is off.

Mrs. McLeod does not waste her fall irrigation water. She just gives the trees a drink; wets the soil six or eight inches. The trees respond by holding their leaves till heavy frosts, putting improved green color into them, for by October some have already fallen and many are turning yellow. The green leaf-laboratories continue to feed the more or less shrunken fruit buds, making them plump and strong to set fruit and mature it next year.

If the leaves were allowed to drop now before the buds are developed to their maximum, many flowers will open and make the Valley a scented paradise next spring. But then their strength is gone and the fruit that starts will drop as it has last spring. In frosty locations such as Mrs. McLeod's the strong buds are the ones that do not yield to Jack Frost. The same advantage is gained under whatever adverse circumstances may come.

Elimination or strengthening of weak fruit buds by pruning is another story which will come later.

Winter Irrigation Inadvisable.—But the fall irrigation must come early enough to allow the ground to dry some and permit cultivation before the continued cold weather comes. She wants the soil to warm up all that is possible, encouraging maximum activity of the leaves as long as they stay on. It is thus in better shape also to meet the coldness of winter and not sour.

If there are no rains till January, Mrs. McLeod irrigates in an attempt to meet the moisture from below, though she admits that is seldom accomplished. But as a rule, she avoids winter irrigation, for it is hard to prevent packing of the soil into a crust that destroys its "life," especially when later winter rains would provide enough anyway. It was several years ago that she advised a near neighbor to do this, but only last year did he admit she was right.

If there is a difference in the value of well water and rain water for irrigation, which now seems well established, this is an added reason for leaving the soil receptive to winter rains rather than filling it with well water and allowing the rains to run off.

Another Example.—The greenest, healthiest looking prune

(Continued on Page 359)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER.

Address all communications and make checks or money orders payable to
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Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. Wickson - - - - - - - Editor
Frank Honeywell - Publisher and Manager
W. H. Schrader - - Advertising Manager
B. E. Hodges
J. C. Loomis - - - - Assistant Editors

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., October 7, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka	.06	1.74	1.83	60°	44°
Red Bluff	.00	T	1.08	80	46
Sacramento	T	T	.52	82	50
San Francisco	.00	.02	.42	74	52
San Jose	.00	.00	.50	80	42
Fresno	.00	.20	.42	86	48
Independence	.00	.20	.39	76	42
San L. Obispo	.00	T	.61	74	44
Los Angeles	.18	.19	.12	72	58
San Diego	.68	.68	.12	70	56

T means trace

The Week.

The world seems to have settled down to war—either in participation or in contemplation. Our distinguished friend, Dr. David Starr Jordan of Stanford University, who during recent years has waged a fierce fight for peace, is being welcomed back to California this week with well-merited honors. Perhaps he also has the conviction that this war must be fought out and that it is likely to bring the world into a state of contrition which will make for salvation.

This war surely promises to modify the gait of the world. During the last half century of unprecedented exhilaration and stimulation in all intellectual and industrial lines, the nations have advanced by all the five gaits of the educated saddle-horse—and then some: the latter being beyond equine acquisition. It really does look as though, for a generation at least, the world would have to drop into a jog-trot, with possibilities of speed therein, as the reward of years of breeding and training, analogous to that of the standard-bred, which transformed jogging into flying — always, however, with feet near the ground. Evidently mankind has been prancing, pirouetting, galloping and bolting too much, for a half-century or more. But we are probably intruding upon the pulpit and the platform, and vainly trying to express by agricultural metaphor, an idea which needs reference to angels and philosophers for its proper presentation.

Agricultural Trotting and Plunging.

But it is clear that in agriculture, as in other things, the world will find the jog-trot the surest means of locomotion. There is too much danger that in farming the enforced change of gait may result in plunging. It would be dull to enforce this consideration by a carefully-studied exhortation. Take a concrete instance: Senor Antonio Giraudier of Cuba has been electrifying the near-farmers at one of our great hotels during the week with accounts of the mission entrusted to him by the president of Cuba, to study the methods and products of agriculture in India with a view to transplanting many of them to Cuba.

"The present European war," said Senor Giraudier, "has shown us that Cuba must have something to depend upon besides her two staples—sugar and tobacco. Just now the tobacco industry in Cuba is paralyzed because the market for it has vanished. There are 20,000 people in Havana idle and hungry.

"Twenty-five per cent of the cultivable land of Cuba is idle. It is planned to plant this soil with products of India, which grow in the same climate and latitude as the West Indies. These include hemp, jute, flax and other textile plants; all the seeds and plants used in the manufacture of vegetable oils—castor, linseed, and lubricants; the alkaloid plants, from which are made opium, cocaine, morphine, hasheesh and their allied products, and lastly, the spices, such as cloves, aloes, pepper, camphor, gum trees, etc. The culture of these products will cause many manufacturing establishments to spring up so that we will not be dependent upon only two industries."

Think of that program to help twenty thousand hungry Cubans! And yet that is not unlike a prescription which may be handed out to Californians almost any day and for that reason alone have we any right to intrude in Cuban affairs. And to forestall such a nerve-racking promoter's dream from disturbing our own slumbers, we must say that any western nation which undertakes to compete with Asiatic countries, in the distinctive products to which their soils and climates are adapted, will utterly fail because of the difference in labor conditions. Again, excepting textile fibers and oils, in which these labor conditions strictly limit the entrance of western countries into production, the balance of the list is comprised of fancy drugs and spices, of which the world supply is fully adequate and of which consumption cannot be notably increased. Of course Cuba has better reason to go to Southern India for suggestions than California has, because Cuba is tropical and California is not. And yet, for hungry Cubans and for Californians, whose healthy appetites are not forced by fasting, productive effort should not be misled into pursuit of such flossy products as Senor Giraudier is gazing at, but should be concentrated upon common food products, which for several years to come, probably, will be in unusual demand and which do stand a chance of rendering hungry Cubans, well-fed and contented—no matter what happens to the rest of the world.

America to Rule the Waves!

And the war promises to give this nation a new gait upon the sea—although the figure of speech is a little seasick. Many things are coming to light which show that Uncle Sam is, after all, not such a poor swimmer as commonly thought. Even such a prominent authority as Edward F. Trefz, field secretary of the Chamber of Commerce of the United States, in an address to several hundred business men of San Francisco, the other day, said that when war was declared in Europe commerce with foreign countries was practically paralyzed because "this great nation had but six ships on the Atlantic ocean." This is well enough to enforce an exhortation for an American merchant marine, such as we surely should have, but the fact seems to be that fifty-four ships, aggregating nearly 250,000 tons, worth approximately $15,000,000, have been added to the American merchant marine since the new ship registry law went into effect. Although the vessels previously sailed under British, German or Belgian flags, they were really American owned and had foreign registry only because they were foreign built, and as Uncle Sam really has quite a little fleet of American-owned ships in the effort, we hope he will now seriously make, to "whiten the seas," according to the old wind-jamming formula, but really to blacken it with smoke of coal and oil.

Of course we are most directly in the participation of our California ports in this new national activity. Already there are nearly fifty large steamers engaged in transporting goods between Pacific and Atlantic ports. Most of these have been built especially for this route, while some have been taken off other runs to ply in the more profitable Panama Canal business. Departures during the week included the Santa Rosalia carrying California products worth a quarter of a million directly to English ports and saving say 35 days by the canal route. And there has also gone out the Washingtonian, with an 11,000 ton capacity cargo of California commodities, more than half of which will be set down on the wharves of Charleston harbor, a region whence we have been largely excluded by high rates by rail. See the contrast: the rail rate on beans from San Francisco to Charleston is $1.10, the water rate is 35 cents; dried fruit by rail is $1.35, by water 40 cents; mixed charges by rail $1.55, by water 40 cents. Surely we have learned a new gait for the sea. It was indeed a jolly, optimistic mariner who said, when the Santa Rosalia steamed out: "Next year, when the opening of the canal is officially celebrated and the business interests of Europe and America more fully realize what the shortening of the distance between California and European ports really means, this state will surely advance in commerce beyond the wildest dreams of the 'forty-niners.'"

A Way Out of Troubles.

But perhaps we are writing too gladly for the sensibilities of this saddened world: let us remember our troubles, but not as those without hope. For the hopefulest thing which has come out of this midsummer's madness over the eight-hour amendment and its related irritations, is the way the Farmers' Protective League has grown—encouraging the hope and expectation that it may become the bulwark of the agricultural industry of the state. As our columns have shown, the league was organized at the Fruit Growers' Convention at Davis, June 4th, ult., by a mere handful of determined men and women, and the actual membership reached 50,000, the 1st day of October. Now the league is organized on a permanent basis, maintaining headquarters at Sacramento, and a legislative committee will be in attendance at the Legislature to scan the bills that are proposed and work against such measures as are deemed inimical to the agricultural interests of California. It will co-operate with those

working for civic betterment, but at no time will it become involved in partisan politics. There are no dues or fees required, but each member may contribute what he thinks he can afford.

If the League lives up to this broad conception of its sphere and scope, its work may be of inestimable importance to the State. It will underwrite all transactions of local societies which are on right lines and its influence toward true development, sound promotion, and rational finance, fair trade and transportation, etc., may be very great. The record and capacity of F. B. McKevitt, president of the League, justifies such expectations. We first saw him 35 years ago with his pants in his boots, holding a plow on his ranch in Vaca Valley: we first saw him addressing a San Francisco public affairs' club on an economic subject. He did both things with grace and effectiveness and he has done lots of things between. He can show all California farmers how to come out in the sunlight or in the limelight and do what California farming enables a man to do and should require him to do when his industry is menaced.

A Story with a Moral.

It is really sad to see how many people are scared lest the general government should do something to show who gets that 65 per cent of every dollar which the consumer pays for his food and clothing. Everybody seemed willing enough to investigate the farmer when the claim was made that he was cornering everything, but when it was demonstrated that he only managed to get 35 cents out of the consumer's dollar, leaving 65 cents unaccounted for, no one seemed to care to account for it, except a few resolute women's clubs and a few mayors of cities who are really fierce for fair play in their respective bailiwicks. And so, when David Lubin proposes to look into this thing widely and deeply through a pair of Uncle Sam's spectacles, almost everybody seems to be frightened nearly to death. It seems that David Lubin has advocated the appointment by the President of a national market commission, a semi-official body, whose function would be the organization of states, counties and localities for the more economic distribution of farm products. It appears that his proposition has been embodied in a joint resolution by Rrepresentative Goodwin of Arkansas, which provides that the commission, composed of fifteen farmers and fourteen men eminent in commerce, law, finance and transportation, shall have authority to act "in so far only as affecting individuals and organizations that shall elect to become a part of a national marketing system."

We canont see why any one who wishes a fairer handling of food products should get so frightened about that or why the doctrine of state's rights should be invoked against it. In the very nature of things any movement which will get anywhere in that line must be national. Nor do we take fright readily over the idea that something national should be done toward reducing that 65 per cent of unexpected distance between the producer and consumer, for we believe that both should get possession of some of that unknown territory. Therefore, a national effort to explore and map that territory is a thoroughly rational proceeding.

It seems to be in the air that regulation of cost to the consumer will, ere long, be realized, and the producer does not fear it. His one-third of the final receipts is no longer in question. He will not get less: he may get more and should get more—but we refrain from argument. A war story will be more interesting. It is cabled from London that the report of the Royal Commission, appointed at the outbreak of the war with full power to deal with all questions on the public sugar supply, shows that there has only been a small increase in prices and no shortage of sugar. The commission practically cornered the available supply and so checked speculation for a rise in the price. The sugar was sold to refiners at a fixed price, with the proviso that they in turn should sell to retailers at moderate prices, which were definitely determined. About 900,000 tons were purchased at an average of $100 a ton, involving an outlay of $90,000,000. It is not expected that the transaction will involve any loss to the government as the prices fixed assure a considerable reserve of profit.

And so it came about that Mrs. Thomas Atkins had sugar in her tea and all the little Atkinses had their lollypops, although Mr. Atkins was unexpectedly called to the continent. Is it not a sweet story?

Queries and Replies

Covering Bermuda Grass.

To the Editor: I wish to put out vines on a piece of ground just purchased. There is about one acre of low ground covered with a dense sod of Bermuda grass. Can I smother this sod by covering with say a foot of ground and in this way have it ready for planting this winter?—BEGINNER, Fresno.

We are not sure that you can. Wait until the top growth is killed by frost and as soon as dry burn it off thoroughly. Then cover with your foot or more of soil and be sure you get that full depth wherever there is Bermuda. Plant your vines without plowing and cultivate very shallow next summer to get as little air as possible down to the Bermuda. Tell us in June 1916 how much Bermuda you have among the vines. Perhaps, however, the spot is low and wet and alkaline. If so, you had better keep the Bermuda and fence it in for a cow pasture.

Not Summer Pruning.

To the Editor: I wish to summer prune my 14-year-old Gravenstein orchard. It bore heavily this year and the trees look very healthy and made good wood growth. When is the proper time to summer prune apple trees? In cutting out new growth, is it advisable to cut to laterals or just take out about one-third of the growth made during the year? Is it advisable to cut out as much wood in summer pruning as we do in winter pruning. The objection I have to winter pruning is that it does considerable damage to my cover crop.—F. H., Sebastopol.

Pruning now is not summer pruning and has none of the methods or purposes of summer pruning, for the trees have practically finished their growth for the season. Therefore, go to it, according to your experience in winter pruning, always cutting to a lateral, if possible, rather than to any arbitrary fraction of the growth. Where you deal with new, unbranched shoots, cut more or less, or not at all, according to amount of growth and its relation to other growth: also with reference to tip or side bearing of different varieties, etc. In summer pruning (which you might have done, say, three months ago) relatively little wood is removed in the case of the apple, while with the apricot it may be quite a severe cutting back. Summer pruning of the apple is for the purpose of modifying the new growth, while with the apricot, it is generally to get rid of it.

Almonds from Utah.

To the Editor: I am sending you under separate cover a small branch of an almond tree, which is growing between Salt Lake City and Ogden, Utah, the branch being brought in to me by a friend. What variety of almond is it? I note that the nuts are hard shelled and therefore presume that they have little or no market value, although the person bringing them in states that the owner tells him that he has about 300 trees of this and some other varieties, and that he gets a fair amount of nuts each year. This is contrary to what I should expect as I should think that the late frosts in the spring in this region would make any commercial success with almonds impossible.—R. K. B., Salt Lake.

The almonds do not look like any variety we grow. They are not so hard as what we call "hardshells" and they are smaller and not so plump. We are not growing any almond with so thin a hull. Perhaps your climatic conditions cause some differences. As for hardness we would class them as medium shell and too small to be desirable except in your local trade.

The amond is apt to bear under wintry conditions providing the temperature does not fall low enough to kill its dormant buds, and cold weather, above that limit, will be useful in keeping the tree inactive and delaying blooming. In this way, steady, moderate cold may be an advantage. Then, if the tree is in a place where spring frosts are prevented by local elevation or protecting environment, the fruit, from late blooming, may come through all right.

Apricot Gum.

To the Editor: This gum is taken from the stump of an apricot tree. Will you please tell me what it is and kindly give me information as to how I can get rid of it?—D. P. A., Kingsburg.

It is simply the result of drying of exuding sap and the sap exudes, sometimes as the result of local bark injury, like sunburn, or from root injury by standing water or alkali or anything else which may bring the whole tree into ill health. There is also a gumming of the apricot and of other fruit trees for which no intelligible cause has been assigned, except that sap movement has been interfered with in some unknown way. Where certain limbs start to gumming they should be cut out, for the rest of the tree may remain normal and healthy. If a tree gets to gumming all over from the old wood, it should be severely cut back. Sometimes the root may recover and make a good new growth, but usually the tree will die.

Who Killed Bermuda?

To the Editor: Bermuda grass is getting worse in our fields every year so that it kills the crops where it grows. What will destroy it?—Mrs. C. W., Twitchel Island.

We know of no one who has found a practicable method of killing Bermuda. Has any one of our subscribers killed it by close pasturing with sheep, or clean culture for two or three years, or chemical treatment?

Two Cover Crops a Year

CITRUS WILT AND "PLOW SOLE."

(Written for the PACIFIC RURAL PRESS by J. E. Adamson, Pomona.)

"Plow sole" is often due to silting which accompanies rush irrigation. It prevents deep penetration of water. This formation may be hindered by slowness of irragation or steady rainfall or plenty of humus, and may be broken up by deep plowing and cultivation and by growing deep-rooted cover coops.

Early fall is a trying time to keep the trees in irrigated orchards from showing serious wilt, because the natural moisture of the preceding wet season has been used up and the only source of supply is the periodic wetting of the irrigtion.

This is the general situation, and yet there are so many variations between individual orchards that there would seem to be some room for study as to the reason why one grove shows serious wilt ten days after the irrigation, while a neighboring place shows none in thirty days with the same water right and the same general soil conditions so far as nature presented them. Between these two extremes there are all varieties of tree thrift showing the unmistakable evidence of the various types of care and method used by the different owners.

There can be nothing personal in a discussion of these conditions as the same variations are to be found in almost all of the older citrus districts under many different apportionments of water and on many grades of soil, showing that the matter is largely one of method and management.

Probably the most potent factor in the serious wilting of irrigated trees in the latter part of the season is the presence of what is usually called "plow sole," a name which only in part calls attention to the real cause for a hard and more or less impervious bed of soil at a depth varying from four to eight inches from the surface.

This hard soil can only be penetrated by water when the water is in long continued contact with it as is the case where the winter is wet and the surface soil is kept saturated for a long period. This can scarcely be done by artificial application of water unless the irrigator has absolute control of the supply; and even then the cost would be so excessive that not many would consider it a good investment. The fact of the matter is that much of this hard subsoil is caused by wrong methods of irrigation more often than by plow or cultivator.

The one thing common to all methods of irrigation, that will show bad results, is the tendency to rush the water through, tending to slick over the bottom of the furrows and prevent the downward movement of the water into the soil. This silting action is of course more pronounced in the more clayey soils and is much slower where the soil is more sandy. But any soil capable of plant culture will silt in time if the humus supply is allowed to fail and the water of irrigation is used in the hydraulic sense and allowed to separate the particles of clay from among the sand and deposit them in the bottom of the furrows.

The basin or flooding method of irrigation is the worst in this matter as the volume of water in the stream used causes it to carry the clay in suspension and then deposit it in the still water of the basins. The evil is further increased by the fact that the flooding of the land makes it hard to get on with tools to break up the surface before the soil has had time to settle into a compact mass which can only be broken up by deep and persistent cultivation.

The irrigation of trees leaves no good reason for the use of the basin method because the water is to be used by roots that are in a tract of soil below the bottom of the cultivated section. The water should be applied with the end in view of getting it down, and not of wetting the surface. This is best done by making as few furrows as will get the normal supply of water into the soil, making these furrows deeper than the regular cultivating has done, then running the irrigation streams just large enough to finish at the appointed time. No one can say anything definite as to the size of irrigation streams. That can only be decided by the case in hand and then only on the job.

If the soil is sandy the streams will need to be much larger than if there is much clay, and the presence of considerable humus will make it necessary to use larger streams and at the same time will prevent the washing of the soil. Never forget the value of humus. Without it your efforts will be of no avail, as it makes all the other elements of tree or plant culture open to the service of the tree.

One of our big citrus men has paraphrased the proverb, "With all your getting get wisdom" by the saying, "With all your getting get Humus!"

In the matter of getting humus for the prevention of plow sole we will get better results from the cover crop method than the application of any material to the surface, for the reason that cover crop, as well as other, roots make up quite a large portion of the entire plant and have so great an effect on the subsoil, both in their growth and in decay. Also for the reason that covercrop cannot be put entirely underground without plowing to a considerable depth to provide enough earth to cover the green stuff and produce thorough decay.

This point of getting the green stuff under to a considerable depth has another element in its favor besides breaking up the plow sole. Organic matter such as stable manure or the various cover crop plants must be attacked by bacteria in the process of decay in order that the fiber of the plant can be broken down and changed over to other forms of matter. The form of this change in which we are most interested is that in which nitrogen is produced in forms available for plant food. The bacteria which produce these results do the best work about six inches below the surface, those nearer the surface making changes which produce cellulose, the nitrogen taking the form of ammonia and escaping to

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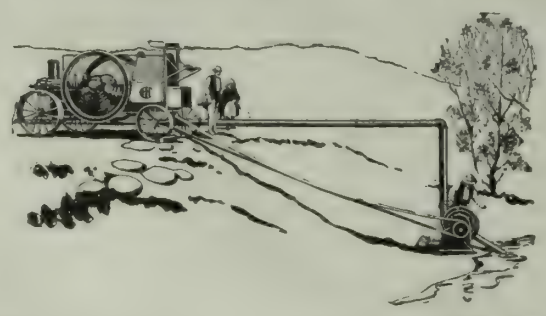

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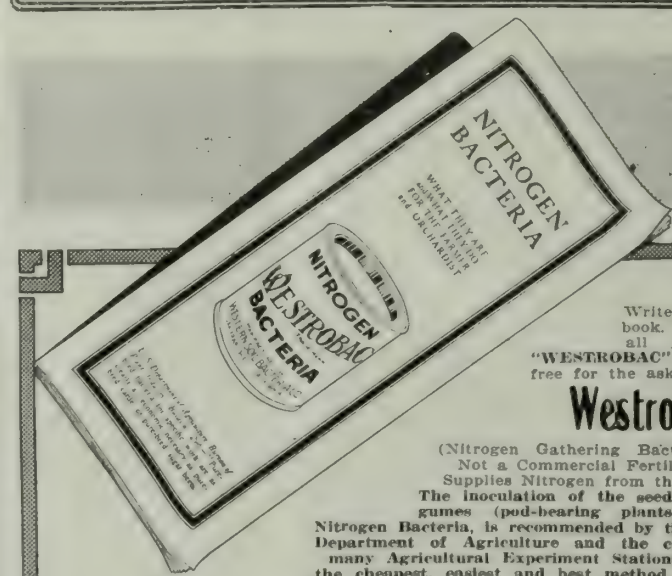

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the atmosphere in the form of gas. The only means at hand that will keep ammonia where it can be made useful by the further change to the nitrate form is water. Therefore it is absolutely essential that the decay shall take place in the presence of moisture in sufficient quantities to insure the conservation of the precious nitrogen.

This requirement of deep covering for the organic matter of course has a direct result in the breaking up of the plow sole; or rather as it should be called irrigation hard-pan. Never cut less than six inches deep with the plow, and eight to ten inches is better, making the furrow nearly twice as wide as the depth and turning the soil completely over with the green crop or stable manure underneath. No damage will result from deep plowing if it is practised at least once a year. The only damage that could come is from the cutting of large numbers of the fibrous roots, and this will not be done if they are kept below the depth at which the plowing is done. Many plow eight inches deep in the spring and cultivate four inches all summer and as a result bring a considerable quantity of the fibrous roots to the surafce which in turn are cut off each spring at a time when they are performing the work of gathering food for the setting of the new crop of fruit.

All these factors in the culture of trees form a very important part in the prevention of serious wilting of the trees in the fall months as the tendency to deep plowing in the spring and deep culture during the summer either with tools or strong growing cover crops prevents the loss of moisture and facilitates the introduction of the water of irrigation to the lower soil levels where the roots are.

Wilting of the citrus tree in September and October does damage in proportion to its extent by causing undersizing of the fruit. In extreme cases it tends to loosen the fruit on the stem and cause an early drop of the matured fruit in the spring.

This dropping is attributed to the presence of a fungus at the junction of the stem with the fruit. No doubt the fungus finds an entrance to the inside of the outer skin by way of the loose stem.

CULL LEMONS FOR GRASSHOPPERS.

If one could be sure to kill all the grasshoppers in Kansas, he probably could claim the fattest township in the state as his reward. We are not sure about it yet, but it rather looks as though the California lemon might call doom on the Kansas hopper. Prof. A. L. Melander tells the St. Joseph Fruit Grower and Farmer all about it:

Last summer Kansas had an unusual outbreak of grasshoppers. In places hundreds of hoppers to the square foot devastated every vestige of green, leaving the ground bare of plant growth as they passed. In fighting this invading army poisoned bran flavored with lemons and oranges was found most successful and was used to the extent of two millions of pounds. This practical test of a remedy of which a single application destroyed those from the of the grasshoppers showed it to be more beneficial than anything heretofore devised. The Kansas formula prescribes the following: A. One pound of Paris green; 20 pounds of bran. Mix thoroughly in a wash tub while dry. Then stir in the following (B) well mixed. B. Two or three lemons or oranges, chopped fine; three pints cheap syrup; three and a half gallons of water.

The fruit juice may be squeezed in the water and the rind and pulp run through an ordinary meat chopper.

While the usual poisoned bran mash is eaten by grasshoppers, the lemon bait greatly increased its attractiveness. Grasshoppers would leave succulent green corn or alfalfa for the bait, and would be attracted from a distance of fifty feet. It is claimed that lemons are more efficient than oranges. In a test where four thousand grasshoppers were actually counted as they visited a series of different baits it was found that lemons attracted over fifty per cent more than where oranges, vinegar, stale beer or anise oil were used. In fact in this instance plain bran or plain syrup proved to be slightly better than when flavored with the latter substances.

The poisoned bran serves best when sown broadcast very early in the morning, as the grasshoppers are then more eager for food and the mash then retains its moisture longer. When dried, it no longer attracts the grasshoppers. From five to ten pounds of the wet mash is sufficient to the acre, but it is best to apply it here and there to the worst infested areas. After a few days the poison may be again distributed if deemed necessary. Grasshoppers are slow to die, but after once feeding on the poisoned bran will be almost sure to succumb in three or four days.

In this campaign against the grasshopper the county commissioners of Western Kansas distributed at county expense nearly seven hundred tons of poisoned bran, allotting two hundred pounds to each farmer. In two days after the treatment made on "Grasshopper Day" the ground was covered with dead grasshoppers, and at the end of what was considered to be the worst grasshopper year in Kansas history.

(Incidentally we may remark that of course the diligent reader will put this away in case he has to fight California hoppers next spring. Incidentally, too, there opens up opportunity for a new brand for California lemons: "Grasshopper brand" —a fine line of cull lemons for Kansas.—Editor.)

Maybe rain is better than pump water for crops but it insn't nearly so handy.

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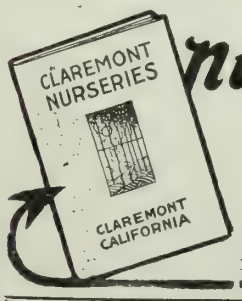

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Country Vegetables

POTATO DISEASES SERIOUS.

[Written for PACIFIC RURAL PRESS.]

Millions of dollars of unnecessary losses are being suffered by the potato growers of California, the University of California now reports.

Preventable diseases of the potato plant—this is declared to be the cause of these immense and needless losses.

A striking example is that newly reclaimed land in the delta of the San Joaquin and Sacramento rivers will sometimes yield 200 to 300 sacks of potatoes to the acre for the first year or two, while ten years later, after five alternate plantings of barley and potatoes, the yield often sinks to as little as 35 sacks to the acre. Preventable diseases are the chief reason for this decline.

The University estimates that a million dollars a year is lost in the delta region from one single fungus disease, "Rhizoctonia," which lives from year to year in the soil on the roots of various plants, and then attacks the underground stolons of the potato plant and prevents the formation of tubers.

Other great losses are caused by two "wilt diseases," due to the growth of two species of fungi in the stems, a growth which cuts off the supply of water from the tops. Moreover these "wilt diseases" furnish means of entrance for "jelly-end," "dry rot," and other destructive fungous and bacterial diseases of potatoes.

"What must be done to prevent these costly diseases?" ask the potato growers.

The land which has become infected with potato diseases must be planted for several years with crops which are not subject to these particular diseases, in order that the fungi, worms, and bacteria which are their cause may starve out of the soil. For this rotation it is best not to use alfalfa, peas, beans, clover, or onions, but to plant certain other crops less likely to carry any of the potato diseases, for example, barley, oats, corn, buckwheat, broomcorn, rye-grass, hemp, or celery.

Disease-free seed potatoes must be used. It is suggested that growers ought to co-operate in bringing such disease-free seed potatoes from some locality where the soil is not inoculated. If tenants will not do this, land-owners should, stipulating in their leases that tenants shall plant only such seed as the owners furnish.

At harvest-time potato-growers should not leave the cull potatoes scattered over the field. No better way could be invented, says the University, for spreading fungi, worms and bacteria which are playing havoc with the potato industry. The volunteer crop springing from the culls harbors disease.

Directly as well as indirectly it will pay the farmer to gather up the potatoes not fit for market, for these culls can be fed profitably to hogs and other live-stock.

Another need is that seed potatoes should be kept in simple storage buildings, with double walls stuffed with straw to keep out the heat that would start sprouts, instead of being piled up on a levee under thatch of tules. The old and easier way is far the more costly in the long run, for the seed potatoes sprout before being planted, and the food stored up in the tubers, which ought to go to feed the young plants in the field, is largely wasted before planting-time. The consequence is a poor stand over the field, and sickly plants which yield easily to disease and furnish a dwindling crop.

At the recent potato convention, a Pacific coast potato association was formed with the idea of stamping out the disease without quarantine. This requires the co-operation of growers, landlords, dealers, transportation companies, agricultural colleges, associations, and departments.

When Maine was placed under federal quarantine on account of powdery potato scab about two years ago, a most serious condition justified the quarantine. No potatoes for seed could be sent out from any shipping point in the infested districts without a certificate of health given after personal inspection by government men. Besides this, the seed from which it grew must have been certified clean, and the land on which it grew must have had no scabby potatoes grown on it.

These drastic measures were a blessing though a hardship. Last spring practically every potato grower treated his seed according to specifications, planted where disease potatoes had not grown before, and there was almost no scab on the crop. Not only was Maine saved as a seed potato state, but the crop of a large part of the United States was saved from a dread disease. While California potatoes have been destroped by order of neighboring states and quarantined from at least one other, it is hoped that the new organization will effect such disease control as will make all quarantine unnecessary and all loss from disease unnnecessary.

A variety for canning, according to J. B. Moran, manager of the Central California Canneries at Lorenzo, should produce a heavy crop of smooth tomatoes uniform in medium size and in bright red color. They should be meaty and the drier the better, and they ought to ripen all over at once. One of their factories has only recently started at Yuba City, where Stone tomatoes are raised and contain the best sum of all desirable qualities. They are also best in quality at Lorenzo, but seem not to yield heavily enough. This is probably due to the cooler climate, since they yield well in Santa Clara Valley.

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Orders are being booked daily and we urge you to not delay. Write us.

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Blake, McFall & Co., Portland, Oregon

Clean Packing Houses.

[Written for PACIFIC RURAL PRESS.]

An "absolutely fly-proof" packing shed is a novelty in California, yet that is practically accomplished where H. T. Drake packs his figs. The dip and grading room is built with tight sides and screened windows, and is directly connected with an open sided packing shed covered with fly screen in good repair.

One floor is of cement, the other of hard packed dirt, and all are swept clean daily. The boxes in which the dipped prunes are carried to the packers are thoroughly washed with salaratus every day. Even the sterilizing dip tank is cleaned twice a day instead of allowing dirt to collect an inch or two deep as may sometimes be seen. After the figs are cleansed and sterilized great care is taken to keep them clean and sterile. The fruit is taken at once into the packing room which is screened in. It is kept covered with netting until it is boxed," says Mr. Drake.

"We believe in absolute cleanliness, our operatives are obliged to wash their hands repeatedly during the day—clean towels are furnished them and every evening the packing house is thoroughly cleaned and all tables and forms used during the day scrubbed with boiling water.

"We have many visitors at our packing house during the season and they eat the figs they have seen handled, which is the ultimate test."

Let us hope that the eastern eaters of California dried fruit will see next year more cleanliness in the handling or they are likely to eat less of it.

FALL PRUNING OF PEACHES.

To the Editor: Since the article in your September 19th issue on "Santa Clara Apricot Pruning" I have heard a good deal of questioning on the part of the farmers as to whether or not the same methods would not work to good advantage with peaches. The season here is very long as you know—limited mostly by water supply. The fruit buds do not seem to have developed excessively, while wood growth is excessive where water has been supplied in any quantity.

Would not a light early fall pruning be of advantage? What would be the particular precautions to take other than avoiding danger from sunburn?—H. K. D., Kerman.

(There is every reason to believe that the principles cited in the article to which you refer apply also to the peach. They were emphasized in "California Fruits" a decade or two ago, and they have been applied largely since that time. It seems to be fully justified by experience that if you cut back when the tree is too far advanced to break new lateral growth the energy will be expended in developing stronger buds on the wood which is retained—besides there are the advantages of getting pruning done earlier, while the days are longer, the ground harder and weather conditions better for work, and more time left for spraying and tillage and a better chance to grow a cover crop also. The chief danger to avoid is the starting of new growth in the fall and therefore signs of coming dormancy are essential. Each tree must be pruned when it has assumed an autumn aspect and lost its summer exuberance. If this comes too early because of drying out of the soil, sunburn must be guarded against by spraying with whitewash. But trees to be thrifty and to bear well should not be allowed to yellow their leaves too soon. No pruning can compensate for such a loss as that, though by reducing evaporating surface it may keep the tree alive until the rains come.—Editor.)

ANTS WHICH EAT HOUSES.

To the Editor: Please tell me how to rid my buildings of ants, not the usual adult insects (they are never in evidence), but a small white grub with formibable jaws that enable them to eat right into the wood. These pests come twice a year, in the fall and spring. They seem to hatch in the ground and either crawl up the boards and go into the shakes and rafters, or more often eat their way up through the main posts and in a short time weaken the timber so that it must be replaced. They come in countless millions and have already cost me several hundred dollars for repairs. The ground on which the buildings stand is a loose, porous sandstone formation and makes an ideal hatching place. Please give particulars in dealing with them. SUBSCRIBER.

Milton, Calaveras County.

(You have to do with "white ants" or termites which are different from common ants in the ways you mention, and in many other ways. It is also seldom possible to destroy them, as you may other ants, by pouring bisulphid or gasoline in their holes for it is almost impossible to find their homesteads, although they do make them in the ground. They will work into buildings even to the second story but they generally do it by mining tunnels up the posts, scantlings, etc. They go up the trunks of trees in the same way. They delight in decaying wood although they will work in sound, even in growing wood or bark in some cases. The best way to fight them is to keep them out. Where buildings can be put on foundations of masonry, concrete, etc., and the timbers kept from all contact with the soil, it is an exclusion act until the masonry or concrete cracks and thus makes a gallery from the soil to the wood above. If posts or other supports in contact with the soil are necessary, there are several things which may be done with some advantage: first, California redwood posts should be used because redwood is comparatively immune and for this reason we do not have so much trouble with white ants in this state as we otherwise would. All other timbers are preferred by them to redwood. In the Philippines, where white ants are worse than here, our redwood has been used for 25 years or more and never known to be invaded by white ants. Second, if you cannot use redwood, all other kinds of posts you use should be thoroughly creosoted. Coating posts heavily with tar protects timber in contact with the soil so long as the coating remains intact.—Editor.)

"We don't know much about this tree business in California. One man in his life can't learn it all," says Mrs. E. McLeod after manual experience in fruit since 1878.

Little Dick: "Papa, didn't you tell Mother we must economize?" Papa: "I did, my son." Little Dick: "Well, I was thinkin' that mebby if you'd get me a pony, I wouldn't wear out so many shoes."—Good News.

Milly declared one day, apropos of the subject of her history lesson, that her dear father was "just as great and good a man as George Washington. To be sure," she added, "he is not quite as well known, and so he is not so popular."

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Grain Smut Explosion.

[Written for PACIFIC RURAL PRESS.]

About 60 smut explosions have occurred this season in the grain threshing machines of eastern Washington, where smut was worse than usual, according to T. O. Morrison, assistant commissioner of the Washington Division of Horticulture. After about 20 of the explosions the College of Agriculture investigated and recommended that a jet of steam be run into the cylinder with the grain. This would dampen it enough to settle the smut ball dust and to put out any fire that might be started by threshing the matches found hidden in many bundles of grain. When a smut ball is smashed open the dust spreads everywhere and the least spark of fire will explode it.

E. C. Roberts, president of the Oregon State Board of Horticulture, suggests that in gravelly countries he has observed especially at the wind-up of a threshing job when cleaning up about the machine the gravel pitched in with the grain sparkles of an evening like fireworks and this might sometimes cause a smut explosion.

Mr. Morrison believes that smut prevention is a matter of vitrioling the seed grain as thoroughly as we must spray scale insects. Every scale must be sprayed, every kernel must be soaked in the solution. As a boy on a large farm of eastern Washington he used to help treat his father's grain openly in troughs, skimming off all smut that would float to the top.

At threshing time, his father's grain would be clean, while that of neighbors who had treated it in the sack would send up a cloud from the machines sometimes like smoke. The solution did not effectively penetrate to the center of sacks full of grain.

Several kinds of smut infest the grains of this state and there are several means by which it may infect new crops. But the vast majority of smutted grain is so because spores of smut were sticking to the seed when planted. The same treatment kills the various kinds of these spores without injuring the grain, if thoroughly done.

Seed grain badly smutted ought not to be used because it cannot produce strong plants if it germinates, though it sure produces a lot of healthy smut.

But whether visibly infected or not, all seed oats and wheat should be dipped in a disinfecting solution. The University tried a pint or pound of 40 per cent formalin in 50 gallons of water as compared with a pound of blue vitrol dissolved in four gallons of cold water on artificially infected seed. The California vitriolic treatment on a half pound of seed each of five varieties gave only 0.33 per cent of smutted plants from that seed, while the formalin treatment gave 17.29 per cent and the untreated seed 49.7 per cent.

But since a thousand spores might stick to a kernel of wheat, and since the killing solution must touch every one of them, the need of scientific thoroughness in treating the seed is apparent. And the lack of thoroughness is the cause of the failures which have wasted time on the seed and tonnage on the crop besides infecting the ground for the next crop. And don't put it back into the old sacks without disinfecting them.

OAT HAY IN BARLEY FIELD.

[Written for PACIFIC RURAL PRESS.]

Before harvesting grain with combined harvesters, there is always a considerable amount of hay cut, with the mower, around the outside edge, next to the fences, in the ten or twelve feet that would otherwise be wasted in cutting the first swath with the harvester.

In barley fields this hay is cut some time before the grain is ripe enough to harvest and is later hauled to the barns.

While barley hay is a good feed, it is not considered nearly so good for horses as oat hay and for that reason a farmer in Yolo county has worked out a scheme that permits him to have oat hay for his horses even though he raises barley grain for the market.

This is accomplished by seeding the outside edge of the field with oats instead of with barley, a drill being used instead of broadcasting. The oat hay from these 12 foot strips around the outside edges of his fields, is sufficient to supply his stock with hay for the entire year. There is no extra work to the system, as it would otherwise be seeded to barley with the rest of the field anyway, but he is well repaid for his ingenuity by the increased value of his hay.

AGRICULTURAL COLLEGE AT YOUR DOOR.

To the Editor: Will you give us the provisions of the Smith Lever Bill?—E. T. P., Cupertino.

(Ten thousand dollars a year of federal money is to be appropriated to each state in which one or more agricultural colleges shall be designated to receive it. In the fiscal years 1915-16, $600,000 additional will be appropriated to the states in proportion of their rural population to that of U. S., provided the same amount is raised within the state for the same purpose. This additional appropriation will be increased to an annual maximum of $4,580,000 in 1922-23 and thereafter. The federal money is to be spent solely for college extension instruction and practical demonstrations for those farmers who are not attending college.

CALIFORNIA MUST RAISE ITS OWN DRAFT HORSES.

To the Editor: The time has come very suddenly, when we must raise our own draft stallions. We can no longer import from Europe and even when the war is over there will be such a shortage all over the continent that there will not be many to spare for this country and prices will be correspondingly high.

Under the circumstances the man who has a few good purebred draft mares is to congratulated and any one who has none and is so situated that he can take care of them will do well to try to get hold of one or two. In draft mares as in most kinds of stock the best are the most protfiable. —Henry Wheatley, Napa.

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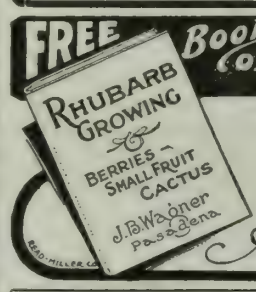

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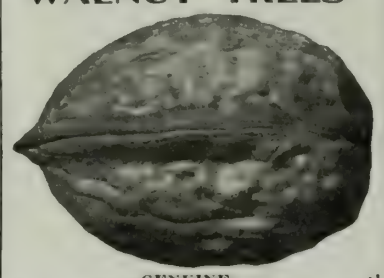
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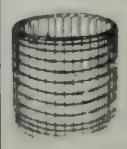
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Remedies for Potash Shortage.

Various suggestions have been made in regard to the steps to be taken by farmers in reference to the shortage of potash in their fertilizers, caused by the greatly reduced shipments of potash from Germany since August. Most of the fertilizer companies have endeavored to make the potash on hand go as far as possible by selling for the present, brands of complete fertilizers containing only 2 or 3 per cent of potash and withholding from sale brands containing larger amounts.

The suggestion that some or all of the potash be replaced by phosphoric acid is absurd, for every school boy knows that one plant food cannot take the place of another. There are some indirect fertilizers, such as lime, gypsum and salt, that can release a limited amount of potash from some soils that contain hydrated silicates of alumina and potash. But if these soils have already been treated with lime or have received repeated dressings of the usual forms of fertilizer containing soluble phosphate with its accompanying gypsum, then the potash in the hydrated silicates has to a large extent already been replaced and the use of more lime or gypsum or salt could not be expected to release much additional potash. Ground limestone or oyster shells act too slowly to be used as potash releasers.

The residue of soda left in the soil by nitrate of soda is more effective in releasing potash than is gypsum, and hence goods in which the nitrogen is largely in the form of nitrate of soda, may have a special value in the present emergency.

It is often stated that decaying organic matter releases potash from the soil but there seems to be no direct evidence of this. On the contrary, Dr. S. Peacock states in the American Fertilizer of Sept. 5, 1914, "Several thoroughly competent researchers have shown that decaying organic matter has little effect on converting inert mineral plant food in the soil into available form."

In any soil the amount of potash capable of being released by these indirect means is a very small fraction of the total potash in the soil, most of which exists in a form about as soluble as window glass. There is no known profitable method for rendering this inert potash of the soil available fast enough to provide for profitable crops. Whatever temporary expedients we may employ in the present emergency, we must keep in mind that the potash thus removed from the semi-available soil reserves must later be replaced if we are to maintain the soil's productiveness.

There is danger in the statement that farmers have been using an excess of potash. Crops use on the average about two and one half times as much potash as phosphoric acid, while the average fertilizer sold contains only half as much potash as phosphoric acid, yet no one claims that we are using too much phosphoric acid. The potash remaining from previous fertilization is practically nothing except in the limited areas where a ton or more of fertilizer has been used per acre on truck crops. Very rarely is half as much potash applied to the wheat, oats, corn, or cotton as the crop removes.

The potash mines are so numerous and the stocks on hand so large that supplies can be promptly sent forward, as soon as European conditions permit freight shipments to be resumed. H. A. HUSTON.

(We believe in finding out whether the soil is deficient in available fertilizer of any kind before spending money that way, but at this time when we are to feed a large part of Europe, it is specially necessary to use all fertilizers needed.—Editor.)

A RENTER'S VIEW OF THE EIGHT HOUR LAW.

To the Editor: I should like to reply to "Subscriber" about the 8-hour law in your issue of September 12th.

Who do you suppose will be hit worst by the eight-hour law, the ranch owner or the renter, or one that runs a ranch on shares? The ranch owner says I can't hire a man and pay him $2.50 for 8 hours' work. I will harvest all I can myself, and the rest I will pasture off with my stock; in this way I can make enough to support my family and pay the taxes for my ranch. In this way I have to hire no man and can get along just the same.

Now comes the renter, and he is the one who suffers. He has to pay a big rent, and has to harvest the crops to do so. By this eight-hour law, he will have to hire two shifts to do the work. What is left for him to pay the rent?

Then comes the man who runs a ranch on shares. He has to divide with the boss, whatever comes in from the ranch, and from his share he has to pay all the help and for whatsoever he needs on the ranch. What kind of money do you suppose this man will make and what time do you think he will have to spend with his family, read and enjoy himself, when he gets up in the morning at four o'clock and works till evening at six, nothing to spare but his meal-time? And you and others are trying, through the ballot, to change it. Don't you know that you are, by doing so, raising the price on your own bread and butter? You are hurting only the poor ranchers; not the rich ones.

Of course we can't all be big ranchers, we can't all start out rich, but how do you expect to get rich, by working eight hours a day with the rest of the day for time to spend what you have made that day?

Believe me I have tried to make a start, for the past ten years, but not with 8 hours' work, but most of the time 17 to 18 hours of work a day. If I can keep up one more year, I shall have a start and be my own boss, and can make a living for my family under my own roof.

Ione. L. VILLIBORGHI.

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Agricultural Review

Fresh Winter Nellis pears moved late in September from Anderson, Shasta county, a carload a day for five days. Dried pears also have been moving, and dried peaches through the Cured Fruit Exchange at 4 cents. While this season was very profitable for pear growers, practically no pear trees were set out last spring in Shasta county, though over 13,000 peach trees were planted. Happy valley has an olive grove of 120 acres. Olives are said to ripen there two weeks earlier than 100 miles south.

The Sebastopol Berry Growers, Inc., who recently lost their warehouse and precooler by fire, are planning to build a two-story plant large enough for warehouse, office, precooler, and cannery. They have heretofore sold to local canneries under a five-year contract, but now prefer to govern this end as they have the fresh shipping and the dried berires in the past.

Peach growers of Del Rey and Sanger met this week to form a growers' association to affiliate with the California Cured Fruit Exchange for better dried peach prices.

The California Apple Show is on all this week in San Francisco. Attendance from October 1 to 5, inclusive, was 55,300. In 209 separate entries 3,346 boxes of apples are on exhibit from every apple-growing section, Pajaro Valley leading in quantity. Of striking interest is the best carload entry and the second best. Some 10,000 boxes are sorted to get the 600 required for such an exhibit. The Watsonville Auditorium is reproduced in a jelly exhibit made by Mrs. Hugh McGowan, amounting to what would fill 4,000 glasses. Electric lights inside the auditorium shine through the jelly walls and windows. A banana apple display of 318 boxes by H. C. Peckham and the Farm and Forest Co. of Watsonville. Ten boxes of several varieties of the 1913 were taken from commercial cold storage only slightly spotted.

A grape fruit shipment of 350 boxes started recently from Florida, but was stopped because the acid content was too high. The Florida law is going to be a boon to Florida citrus growers in this way. A carload of pomegrantes was recently shipped from Lindsay. Emperor grapes will soon be moving.

An estimated 36,000 pound crop of dates has begun to be picked on the Heber Date Farm in Imperial Valley. Fruit growers of the San Joaquin Valley may look for a campaign to introduce dates there, according to W. R. Nutting, who is now pushing that idea as he did the Raisin Exchange.

The war on citrus scale in Tulare county is to be dignified by the backing of a special county law if the wishes of a growers' meeting are regarded. The orange crop here is being estimated higher than ever, and many of them stood through the show entirely sound; others were even up to 90 per cent of normal. Special efforts are being made to prevent shipment of unripe fruit this fall.

Fig packing promises to last till December in Fresno county, two weeks later than usual on account of the heavy crop.

The La Habra Citrus Association recently sent out its last car of oranges for the season at $1.75 to $2 per box, f. o. b. Lemon shipments are said to have slowed down on account of the reduction in price to $3.50 per box, f. o. b.

Placer county foothills are being boomed for olives—no reason why they shouldn't grow there, as shown by numerous orchards now in bearing.

From Contra Costa county come two samples at once of olives badly infested with black scale. This seems to be widespread and serious there, which is unfortunate since the hot season, which usually kills most of the black scale, is past.

A car of this year's walnuts was shipped from Goleta to New Jersey as soon as the prices were set September 24. This was early even for this season, which is two weeks ahead of time. Gathering is in full swing—the nuts are good, shuck easily and sell at higher prices than ever. A danger signal is displayed, however, in the report that these walnuts are selling to the eastern consumer at 75 to 80 cents per pound. Walnut consumption at such a price, considering the hard times felt by many workers, is likely to decrease seriously.

Bleached almonds are becoming unpopular more and more. Yet the Sutter Association is bleaching theirs by the carload. They had a great crop there this year and feel quite optimistic.

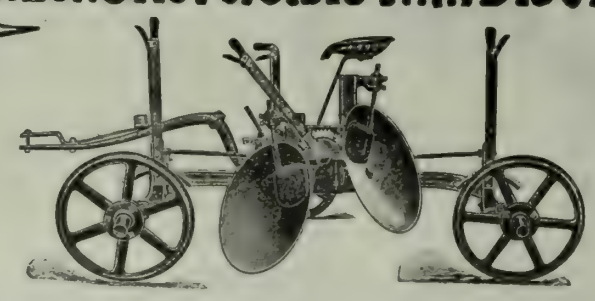
Nurserymen of California meet in San Diego October 15, 16 and 17 for their fourth annual convention. Among subjects to be discussed are: 8-hour law, quarantine methods and suggestions for improvement, transportation problems, dynamiting soils, lemon and avocado culture, the Panama-California Exposition to be held next year at San Diego, home-grown seedling stocks. Among the speakers are Leonard Coates, W. S. Guilford, Geo. C. Roeding, John G. Morley, Ernest Braunton and others who know their subjects as well.

Grape shipping, which has been depressed on account of poor returns, felt especially on Lodi Tokays and Fresno Malagas, is picking up again in expectation of a clean-up. Emperors and Malagas are going out from Dinuba and Fresno, though most of the Emperors will be packed in drums and held till cold winter in the East. The local demand for "slipskin" grapes is the cause of what will be a rather heavy planting of these varieties next season.

About 8900 cars of raisins were shipped from the Fresno district in August, about 3300 cars more than in August, 1913. The demand for the early seedless was so heavy that orders had to be prorated among the buyers, with hopes, however, that they might be completely filled later. The late raisins have cured well.

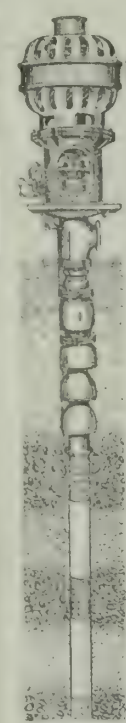
The foreign markets east and west from California have taken substantial amounts, especially of the seeded product, and this is looked on as the entering wedge of a

Mathews Reversible Twin Disc Plow



THIS is the only reversible disc plow which does not use segments to fix the position of the disc, and is therefore the only one which will always plow the same width of furrow both ways on level land and hillsides—and stick to the work on hillsides.
It leaves no water furrows. Discs are fixed in exactly the same working position every time the plow is lowered. Two discs wear twice as long as one—but cost you no more.
We are general agents for a complete line of Disc plows. Glad to tell you about them at any time.

Newell Mathews Co.
ESTABLISHED 1886
Implements, Wagons, Dairy Supplies, Road and Grading Machinery
200 N. Los Angeles Street, Los Angeles



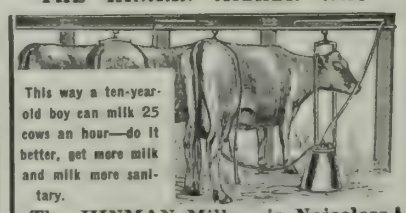
The Waters Deep Under The Earth

are yours at the touch of the switch, if you have a Byron-Jackson Installation—take the pump pictured here for instance—Latest Improved Deep Well Vertical Turbine Pump with direct connected vertical motor—a combination that guarantees continuous efficient service; require comparatively no attention and no priming at all—develops slow wells, increases well capacity—costs less to install than any other type of deep well pump.

Send for Catalogue No. 47-C

BYRON-JACKSON IRON WORKS
357-361 MARKET ST., SAN FRANCISCO, CAL.
LOS ANGELES—212 No. Los Angeles St.
WORKS—West Berkeley, Cal.

THE HINMAN MILKER WAY



This way a ten-year-old boy can milk 25 cows an hour—do it better, get more milk and milk more sanitary.

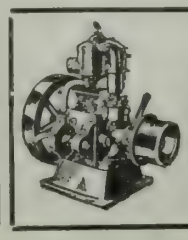
The HINMAN Milker is Noiseless
light, easily cleaned, no vacuum in pail, no piping—just a simple drive rod; only two moving parts. Pays 150% on investment. Milks 105,000 cows morning and night. Write for free booklet before you turn page.
The Hinman Milking Machine Co.
52-62 Elizabeth St., Oneida, N. Y.

FOR SALE
By Owner
A Fine Belgian Stallion

6 years old, sound and alright every way. I carried away two prizes with him at the California State Fair this season.

I will sell this horse cheap if sold soon. For further particulars write me or come and see the horse.

Watson's Feed and Livery Stables
PATTERSON, CAL.



Light Weight CUSHMAN Gasoline Engine
for all purposes. The 4-cycle, 4-H. P. only weighs 190 lbs. This is a no-trouble engine. Made in sizes from 4 to 25 H. P.
Write for Catalog
THOMAS R. BROWNE,
Stockton, Cal.

AXLE & GREASE
LARGE HANDY BUCKET
SMALL CAN
WHITTIER COBURN CO. S.F. SOLE MFRS.

greatly increased market. Seeding of raisins has increased from a few hundred tons in 1907 to about 30,000 tons now.

Sutter county raisins have cured finely in spite of the flurries caused by the appearance of clouds over the drying grounds recently. The sulphuring which has been prevalent, is being done away.

Alfalfa Seed, amounting to $8,000 at 10¾ cents a pound, has been shipped to foreign American countries from Arbuckle, Colusa county. Only a few growers attempt this, a very promising field of agriculture here, where the summers are hot and dry.

Rice growers of Butte county have a good thing and they know it, and they are bound to make the world know it, and they are bound to spread their industry to other sections as Colusa and Gleen counties, where it is showing profitable crops. Now is organized a company to plant 1,440 acres in Yolo county. They will have to build a $5,000 dam and complete irrigation works, and hope to do it before heavy rains. Fresno and Kern counties are using alkali land for this seemingly adaptable crop.

Every once in a while we will hear of a new rice mill, either in the rice section or in San Francisco, or else it is more about the old ones. There are two at Biggs, one just completed at Gridley, one whose capacity was recently doubled in San Francisco, and another is hovering over Butte county uncertain where to light. At all the fairs, including the Apple Show, they have complete exhibits of rice on the straw and in all stages of preparation for food and the many uses to which the by-products are put.

Wheat planting in the San Joaquin is getting a boost on account of the war and many thousands of acres of virgin and other soil are said to be destined to bear bread food next year for Europe. This in spite of the high prices of barley and its comparative freedom from smut. It is said that 9,000,000 bushels of California wheat has been held unthreshed to wait for higher prices because it would have to be sold as soon as threshed to satisfy bills payable.

Nevada grain growers also are in luck this year on account of great crops. Most of this, however, is milled at home, so perhaps high prices will be a mere matter of robbing Peter to pay Paul.

The Imperial Valley cotton crop is estimated to be worth $3,000,000 if it can be sold at customary prices.

One farmer near Paso Robles gathered 10,200 sacks of grain from 1,000 acres of land.

The estimated Fresno Fair attendance was 75,000, an increase of 15,000 over last year. The exhibits were taken away this week and this cauldron of activity has cooled down for another year's silence.

Kings county fair started this week with practically everything in place, ready for the biggest fair ever. October 10 is Fresno County Day.

The Ventura county fair was held at Ventura September 28, 29, and 30, with splendid results and fine weather. The second day was Santa Barbara day, about 4000 people attending.

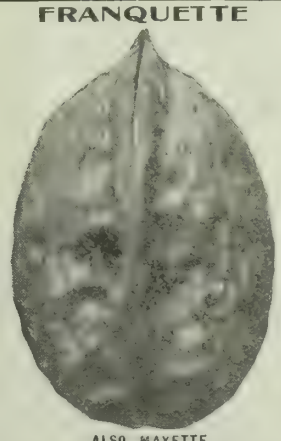
A Belgian stallion, weighing 2200, took first prize in its class, belonging to Camarillo. Percheron and Norman ribbons went to Gil Bras, the heaviest horse in the county being a Percheron stallion, weighing 2260. Many pure-bred jacks were also exhibited, besides some very fine Jersey, Holstein and Hereford bulls and heifers. Berkshire hogs were also shown, the heaviest weighing 450.

Melons, corn, tomatoes, potatoes, beans, beets, peas, etc., also a very fine exhibit of the Oxnard sugar plant. Three-fourths of the Lima beans of the world are grown in Ventura county. One man averaged 47 sacks to the acre on 72 acres.

Many exhibits were shown of the leading 1915 model automobiles and various merchants in Ventura had booths in the big tent.

Rechristened at 26 Years.—Specializing on the commercial and news end of the fruit business, almost since its establishment in 1888, our esteemed contemporary, the California Fruit Grower, published by Howard C. Rowley, has abolished its misnomer and now appears under the appropriate head, "California Fruit News." While this will jar our eyes for a time we commend the change of name. Mr. Rowley assures us that no change of ownership or policy is contemplated.

FRANQUETTE



ALSO MAYETTE
All trees grafted on California Black Walnut Root.
Sizes 3 to 10 feet. Write for prices.
SUNSET NURSERY
525 W. San Carlos Street
San Jose, Calif.

MANURE
CARLOAD LOTS.
HORSE, COW or SHEEP.
Fresh or Well Rotted.
Call or write
PACIFIC MANURE & FERTILIZER CO.,
429 Davis St., San Francisco.

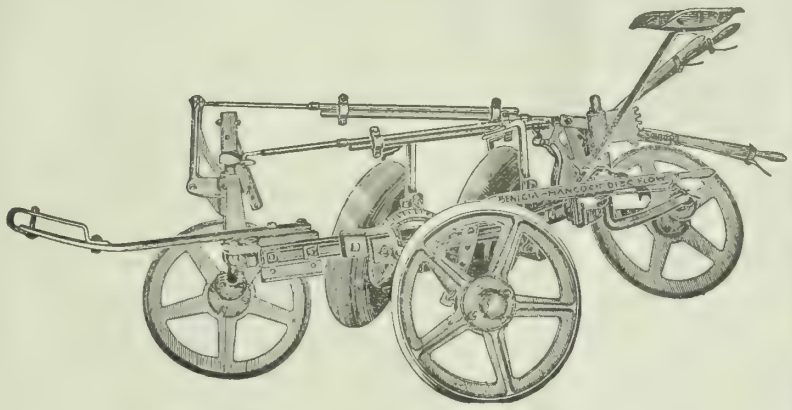
Benicia-Hancock DISC PLOWS
THE PLOW WITH A PEDIGREE

The man behind the hoe selects the livestock after due consideration of its lineage; his plant life, seeds, etc., must have the right genealogy before he buys.

Then why not a plow with a pedigree—the tool that tills the soil that makes the profits.

Benicia-Hancock Plows have advanced from stage to stage—keeping abreast or ahead of the times—and today without question heads the list, and represents the very highest type of plow manufacture.

THE PLOW YOU WILL EVENTUALLY BUY



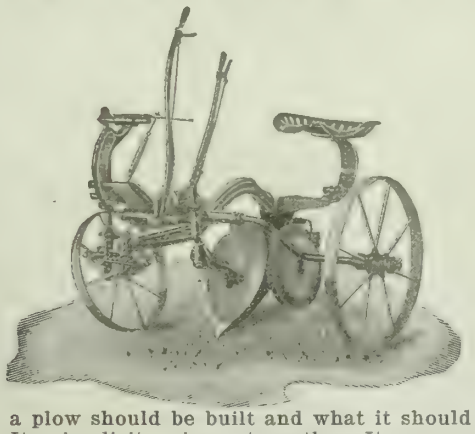
Benicia-Hancock, 2-Disc Size.

A few exclusive features: Lighter draft than any other; number of discs and size of cut may be increased or diminished as desired; easier of operation, and simple of construction.

ABSOLUTELY GUARANTEED—YOU CAN'T LOSE
WRITE FOR FURTHER PARTICULARS
MANUFACTURERS

Baker & Hamilton
San Francisco Los Angeles

A Record Smasher!



We have won the patronage of the farmers through the merits of many styles of plows, but we have never offered a plow with the trade getting qualities of

Oliver Noll Sulky

It grips every farmer who sees it. It satisfies fully and quickly every notion he has held as to how a plow should be built and what it should accomplish. Its simplicity gives strength. Its compactness lessens the draft. Its construction makes it convenient to handle. It substitutes a greased wheel for the friction of a grinding, binding draft producing landslide.

WE WANT TO PLACE A FULL DESCRIPTION OF IT IN YOUR HANDS. WRITE US

Oliver Chilled Plow Works, San Francisco

BULLS! BULLS! BULLS!
I Can place in California
100 Registered Shorthorns and 100 Registered Hereford Bulls

All of serviceable age for the coming year's use. Miller & Lux, Mayo Newhall and Vanderlynn Stow have had three cars of these bulls shipped to them to be used next spring. Anyone in the market can inquire of any of the above mentioned gentlemen regarding their quality and individuality. They are well bred, carry a great amount of natural flesh and are large for their age. These bulls can be kept cheaper here than in the East as corn is now selling at 75 cents per bushel in Iowa. Buy now and save a large corn bill. Address

W. M. Carruthers, 721 Hearst Bldg., San Francisco

Mechanical Power on the Farm.

COST OF RUNNING AUTOS.

[Written for the PACIFIC RURAL PRESS.]

For administrative purposes of the State Fish and Game Commission the state is divided into four districts, Los Angeles, Fresno, San Francisco, and Sacramento, the last named of which includes most of California north of the latitude of Sacramento. In this district 21 deputy commissioners patrol constantly alert for law breakers. Five of these use motorcycles, three use automobiles. The State furnishes the motorcycles and pays all expense of running and repairing them. Deputies using autos furnish their own, and the State pays them $25 per month rental and furnishes gas and oil. The autos are very handy for these law enforcers, for they can bring their prisoners to town while the motorcyclists must get another conveyance.

Monthly expenses taken at random from report cards of the deputy fish commissioners follow: W. J. Green of Sacramento, auto, 702 miles, $34.92 including $25 rental. R. L. Sinkey, Woodland, auto, 878 miles, $32.50; E. D. Ricketts, Live Oak, 1085 miles, $42.85; W. J. Moore, Napa, auto, 904 miles, $40.30; Richard Squire, motorcycle, 450 miles, $6.45; Scroggs, Placer county, motorcycle, 10,062 miles, $97.40; George J. Merrit, motorcycle, 882 miles, $17.75. These men are running over wild mountain roads, often recklessly in pursuit of offenders, and the upkeep, gas and oil cost from less than one cent per mile up to three cents on steep roads and when considerable repairs are necessary.

WHAT THE GAS ENGINE IS DOING ON THE FARM.

E. C. Gee, Instructor in Rural Engineering in the Texas Agricultural College, prepares this statement:

A gas engine enthusiast has figured out 250 uses for the gas engine on the farm. This could doubtless be done, because nearly every week one can read of a new stunt that some ingenious farmer has made his engine do.

The farm gas engine has passed its experimental stage and is rapidly becoming a farm necessity. The farmer is coming more to appreciate his iron hired man, one that never complains or tires of long hours. In a measure the gas engine is like an animal: It requires feed and care, its feed consisting of fuel in the form of gasoline, kerosene or distillate; plenty of lubricating oil, water for cooling, and fresh air. Did you know that the engine will do much better work if it is in a well-ventilated room than if it was in a close room? Your engine will also pay you in service for every minute you spend wiping off the oil and grease. When you are cleaning the engine this will give you an opportunity to see every part and you will in this way note any loose nuts or any heated bearings.

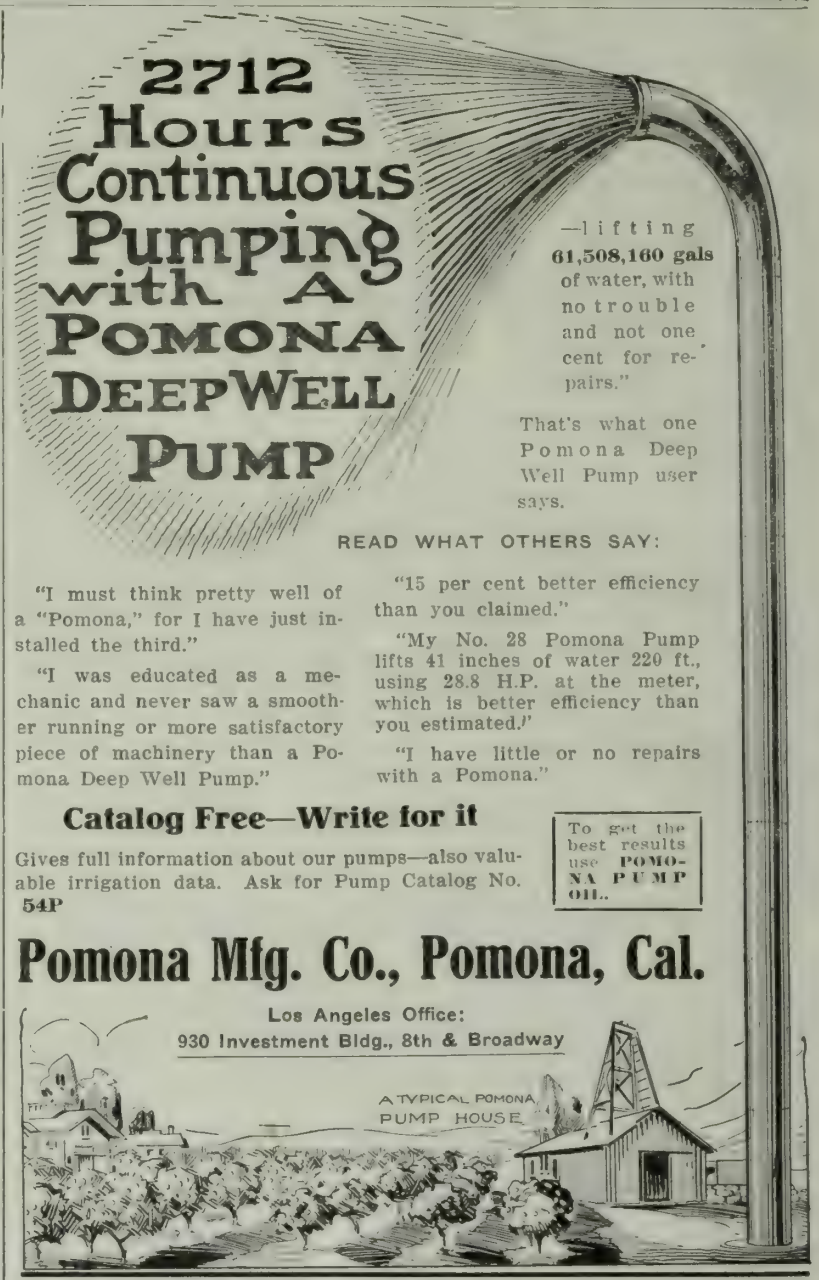
Some of the work on a farm requires that the engine be moved from place to place. This made the portable engine necessary. Where the farmer has work that requires the services of a portable engine he can doubtless also use a small stationary engine to a good advantage. The work that requires the portable engine is usually heavy, such as sawing wood, shelling corn, cutting silage, baling hay, pumping irrigation water, threshing grain, and numerous other heavy duties. On the other hand, the work of the small stationary engine would be separating milk, running a milking machine, churning butter, washing machine, pumping water for house use, grinding feed, etc. The larger engines would do the easy work, but it would be of doubtful economy to furnish fuel and lubricating oil for a 10 horsepower engine to do the work that requires only one-half horsepower. The farmer will generally feel that he is getting more use out of his engine if it is in its place ready to run at all times; for this reason the portable engine is not as satisfactory as the stationary type for everyday farm chores. The best method is to erect a small powerhouse and drive the various machines from line shaft. Bolt the engine to a good concrete base, but put a 4-by-4-inch or 4-by-6-inch timber between the engine base and the concrete. This will act as a cushion for the engine. If the engine is equipped with a muffler on a stub pipe, lengthen the pipe so that the muffler can be placed outside of the building. The engine will now run without vibration and noise. It is next to impossible to get good results from an engine sitting on a floor and shaking so that its own parts will loosen and come out of adjustment. The writer has seen engines running and vibrating until the timer would loosen and become so badly out of adjustment that the engine would stop. No one can expect an engine to give service under those conditions.

The gasoline engine is an ever ready, willing servant. It can be applied to most all kinds of routine work. There was a time when the farmer thought that it could only be used to pump water, but now it can be made to do the work of a man and scoopshovel in elevating the crops into the cribs and granaries, a man and pitchfork in pitching hay into the barn, and the man and saw in getting the supply of fuel ready for the stove and furnace. The gasoline engine has made possible in the country many of the city conveniences, such as hot and cold running water in the residences; and the isolated electric plant and storage battery, in this way making possible electric lights and the motor with all of its varied uses.

The gas engine is becoming one of the essential labor saving farm tools and the man who will study to make them do more of his farm work will surely save time and labor.

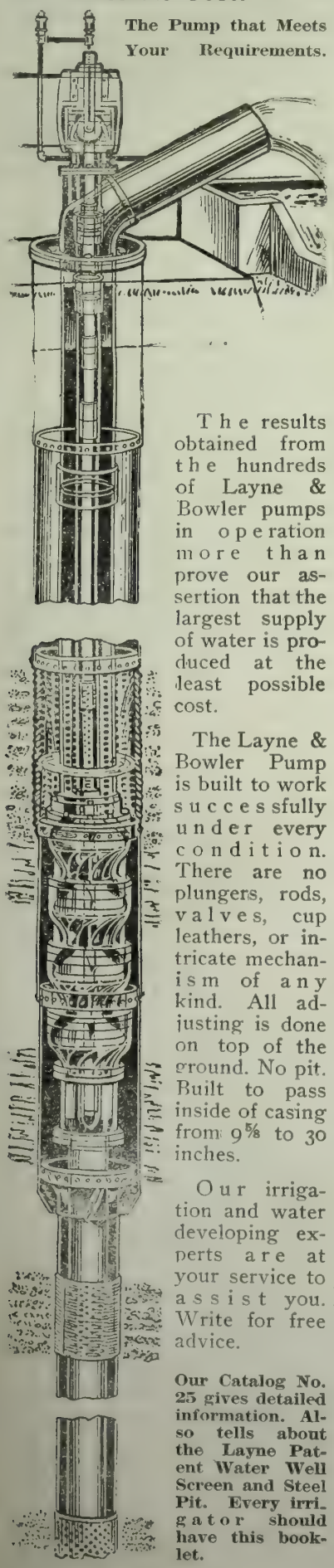
TRACTORS OF FORMER DAYS.

For those of the younger generation who think mechanical farm power is a modern development, it is interesting to turn to the Pacific Rural Press for January 14, 1871. On the front page is the picture of a Thompson rubber-tired steam tractor brought to California for use with an eight-gang plow as well as other power pulling. Two sizes were



The Layne & Bowler Pump

Secures the largest supply of water at the least Possible Cost.



The Pump that Meets Your Requirements.

The results obtained from the hundreds of Layne & Bowler pumps in operation more than prove our assertion that the largest supply of water is produced at the least possible cost.

The Layne & Bowler Pump is built to work successfully under every condition. There are no plungers, rods, valves, cup leathers, or intricate mechanism of any kind. All adjusting is done on top of the ground. No pit. Built to pass inside of casing from 9⅝ to 30 inches.

Our irrigation and water developing experts are at your service to assist you. Write for free advice.

Our Catalog No. 25 gives detailed information. Also tells about the Layne Patent Water Well Screen and Steel Pit. Every irrigator should have this booklet.

Layne & Bowler Corp.
900-910 Sante Fe Ave.
Los Angeles, Cal.

made, 8 and 12 h. p. They used about ½ ton of coal daily, could speed up to ten miles an hour, cost $5,000 to $6,000, were made in New Jersey, and like some of our smart tractors of today could turn with their inner drive wheel, making a circle of less than three feet radius.

They could be used for stationary engine purposes. The rubber tires were loose fitted, so that sudden strains did not hurt them.

The editorial policy was announced to "treat steam plowing, seeding, and harvesting for large tracts," etc.

PEOPLE BUYING PUMPS

For the years 1911, 1912 and 1913 and up to September 22, 1914, one firm, the California Hydraulic Engineering and Supply Company, have sold a total of 1542 pumps for irrigation. Of these, 326 have been sold in 1914 in spite of the comparatively dull times.

MOTOR AND PUMP IN PIT.

"I paid $1.15 an hour for a man with a gas engine to pump the 400 gallons of water per hour that I can handle in irrigating my orchard," says C. A. Braun of Santa Clara county.

"Figuring on putting in an engine of my own, I found that a suitable rubber belt would cost more than I could afford and I was told it would require a 35 h. p. engine or motor to raise the water which is below the 60-foot pit.

"But I got from my son a centrifugal pump with a 15 h. p. motor connected on the same axle. This was put loosely on a platform and the whole thing lowered within 10 feet of the bottom of the pit by rope and pulley with a windlass. Pipe joints were added above the pump as it was lowered. The top joint has a 'T' at the upper end to direct the water into the ditch.

"The outfit weighs 1700 pounds so that a ¾ inch rope and double-single blocks with a little windlass are ample to raise and lower it as the water rises or falls. Flexible wires connect it with the switchboard fastened to the inside of the house. The switchboard contains instruments for measuring the current, fuses, and a gauge which shows just how far the surface of the water is below the pump. It was 27 feet at this time. If necessary the pump could be lowered 10 feet more.

"An electric light is also connected by a long cord so it can be lowered to the pump. The outfit is oiled by a system of small pipes hanging from the oil tank at the surface. This is fixed so that the dropping oil may be seen at any time.

"Current costs 3 cents per kilowatt hour for the first 300; for all over that it is 2 cents. The cost of running this pump is usually 23 cents an hour. The small horsepower is largely due to the direct connection which saves the 3 to 8 per cent of power wasted in each bearing of more complicated systems. And the motor is not loaded to its full capacity. This accounts for the low cost which would be about 33 cents an hour if the full h. p. were used. The first cost was about $900 for the outfit."

LARROWE'S
MOLASSES-DRIED BEET PULP

CLEAN — HEALTHFUL
KEEPS INDEFINITELY

LARROWE'S MOLASSES-DRIED BEET PULP is simply the plain beet pulp with beet molasses dried, but on account of its sweetness it is being preferred by many dairymen and feeders—especially those who use it for fattening. It has all the feeding value of the plain, but with the addition of molasses. Horses grow sleek, stock fatten rapidly, hens lay more eggs—when fed Larrowe's Molasses-Dried Beet Pulp.

You certainly can well afford to give this popular feed a trial. Your feed dealer will supply it to you in 100-lb. sacks—and one sack will prove to you its worth.

LARROWE'S DRIED BEET PULP
Just Like Roots
Makes More Milk

THE IDEAL FEED FOR DAIRY COWS

Larrowe's Dried Beet Pulp improves the health and increases the flow of milk. It furnishes more succulence than silage, greater digestibility, an abundance of carbo hydrates—and is just what is needed with alfalfa to make a perfectly balanced ration.

A succulent—palatable—nutritious—vegetable feed—for

—they all eat with relish and thrive on Larrowe's Molasses-Dried Beet Pulp.

ORDER FROM YOUR DEALER

Tell him you want "Larrowe's"—the kind that is always uniform, never blackened or burned. If your dealer hasn't it—tell him to write to us.

Valuable Book—"PROFITABLE FEEDING"—Free

Send for a copy of our booklet "Profitable Feeding," giving valuable information, also instructions for the use of Dried Beet Pulp. Your name and address on a postal will bring you a copy free.

THE LARROWE MILLING COMPANY
607 Central Building Los Angeles, Cal.

Chicago
and East

Three Daily Limited Trains
from San Francisco
VIA

Ogden Route

Through the Gorge of the American River, across the Sierra-Nevadas and Great Salt Lake

"OVERLAND LIMITED"
EXTRA FARE $10
Lv. Ferry Station 4:00 p. m.

"PACIFIC LIMITED"
Lv. Ferry Station 10:20 a. m.

"SAN FRANCISCO LIMITED"
Lv. Fery Station 2:00 p. m.

ROCK BALLAST HEAVY STEEL RAILS
Protected by Automatic Electric Block Signals

Southern Pacific

THE EXPOSITION LINE—1915—FIRST IN SAFETY

With the Livestock Men

A number of stockmen in Shasta and Tehama Counties object to the proposed 80,000-acre Mt. Lassen National Park. They think such a project would mean restriction of grazing for some of them and would also prevent indiscriminate timber cutting. A committee was appointed by the Shasta County Development Association to locate boundaries that would not withdraw agricultural lands from use before the bill is presented to Congress. Shasta County hopes to take in some tourist money on the strength of her energetic mountain.

About 800 carloads of Nevada steers are said to have been marketed in the past two weeks. It is estimated that about the usual 90,000 cattle will be shipped from Nevada before the end of the year. It is suggested that it would pay the growers to buy hay and feed and fatten their cattle rather than sell them as feeders to the wholesale butchers. Several hay ranchers of Mason Valley are buying cattle to feed. Among these are Stickney & Strosnider, who bought a trainload, and R. C. Kirman Co., 1000 head.

That the Tulare Cow Testing Association has condemned some of its star boarders or else better herds were entered, is evident from the report of its secretary for the second year of its operation. For the 13 herds which have complete records, an average gain of 22 1-2 pounds per cow is announced. The highest butter fat producer was a Jersey, which yielded 437 1-2 pounds.

C. W. Bowers of Davis recently shipped a carload of horses to New Mexico. Many of them were State Fair prize winners. Some Percherons and saddle horses and a jack were included. This, with the cattle shipment to Honolulu noted elsewhere in these columns, seems to indicate that outsiders are watching the exhibits of our State Fair.

A Federal dairy farm adviser will be stationed at Fallon, Nevada, to help the farmers of the newly opened Truckee-Carson project to get started right. How to get more cows, systematic breeding for improvement including community co-operation, intelligent feeding, cream marketing and treatment of cattle diseases will receive particular emphasis.

The Porterville Alfalfa Company has been fattening nearly 1200 cattle on rolled barley and alfalfa. Over 400 head were recently turned off at 1200 pounds after 75 days of feeding. Five hundred new Herefords will take their place at the feed racks.

The Garden City Sanitarium of San Jose has recently sold the young bull Victor Hope's Victor 117162 to the Pine Ridge herd of Pacific Grove for $500. Victor's sire is Gertie's son, and his dam is Victor's Hope, which is giving seven gallons of milk per day at present.

Twenty-nine cars of cattle were recently brought as the first shipment from Arizona and New Mexico, by the Kern County Land Company, for winter feeding on Kern county ranges.

Resolutions were adopted at the Milk Conference at Berkeley, looking toward uniform pure milk laws for the whole State. Some of the papers read there will be found in the Pacific Rural Press.

A dried-milk corporation project is seeking endorsement from the Kings County Chamber of Commerce; to add its demand to the already strong market for dairy products of that section.

The Simon Newman Co., of Newman, Cal., recently shipped some State Fair prize-winning Hereford bulls to Honolulu. They expect to follow this up by shipment of heifers.

Over 200 new cows have been brought to the Fairmead colonies in the past few weeks, and $50,000 worth of land sold to dairymen. This section already has a third of all the cows in Madera County.

In the five-day milking contest at the State Fair, Holsteins belonging to A. W. Morris and Sons took the highest three records for both milk and butterfat among aged cows.

Holstein breeders at the State Fair sent resolutions of sympathy to the family of C. J. Welch of Los Banos. His wife and son will contiue to handle the Holsteins.

About 170 Holsteins belonging to J. A. Silva of Turlock were auctioned last week. About 50 hogs and 14 horses also were sold.

The heaviest wool clip of years is being sheared from 60,000 sheep in the Waterford district of Stanislaus county.

Louis Olarrea has sold his herd of 141 Holsteins and the rest of his ranch stock, to return to Spain.

Horse Owners! Use

GOMBAULT'S **Caustic Balsam**

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all linaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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Hanford, October 28, 1914

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ONE REGISTERED BOAR, 14 months old. Sire Prince Gailliard, head of the Berkshire herd of Hawaiian University College Farm. Price, $50. C. H. Thompson, Novato, Cal.

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MISCELLANEOUS

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

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WEISSBAUM PIPE WORKS,
160 Eleventh St., San Francisco.

Veterinary Queries and Replies

[Answered by Dr. Robt. Boyd, San Francisco Veterinary College.]

NOT LAMPERS.

To the Editor: My horses have what is said to be lampers. The gums of the upper jaws are swollen and extend down beyond the front teeth. Am told the only remedy is burning. As this will make them shy when handled, I want another remedy. I feed hay but very little grain.—R. S. M., Hanford.

(The condition you notice is in all probability not lampers, as this is a somewhat rare disease and then only met with in young horses. In lampers the bars of the mouth are inflamed and the horse eats with difficulty and cannot bear the bars to be touched. The bars in many horses are long and extend down to the molar teeth or even below, but this is a provision of nature and should not be interfered with. The practice of burning the bars is inhumane in the extreme and the direct opposite of the correct treatment. If your horse is eating well be satisfied there is no lampers and I would strongly advise you against taking the advice of any person who advised burning the bars of the mouth. Such practice was abolished with the Dark Ages.)

MARE WITH RUPTURE.

To the Editor: Would it hurt to breed a mare with a rupture, the size of a walnut? She was supposed to have been born with rupture.—R. J. C., Upper Lake.

(You do not mention where the rupture is located on the animal, which is of importance as there are several different kinds of rupture or hernia. A hernia of this size, however, would not be liable to cause any trouble in any case.)

COLT IN POOR CONDITION.

To the Editor: I have a colt that has been very much neglected and is very poor. I now intend to keep her up and feed her. Can you tell me what would be the best ration for her? She is three years old. When I feed her barley, wet or dry, it seems to clog in her throat and she will strain hard to swallow it. Please advise me what to do for her.—F. C., Paradise.

(You do not state weight of colt or if at work, which are both of importance in estimating a ration. We do not advise barley as a grain for horses unless boiled and then only sparingly. If colt is of a draft breed and not doing work, except as exercise, the grain ration should be about half a gallon of good oats, and about a pint of wheat bran, three times daily. The evening feed might be boiled, taking care to boil each day's ration so as not to allow it to sour. Allow about a breakfast cup full of ground flaxseed daily in feed, starting with half this amount and working up, and about 12 pounds of good hay. The straining in swallowing might be due to a number of causes. I would have the animal examined by a qualified veterinarian, if there is one in your locality.)

HOG QUESTION INDEFINITE.

To the Editor: I had a purebred Poland China sow, weighing about 350 pounds, about five years old. One morning I noticed she had trouble breathing. She kept getting worse and swelling around her neck and throat till she died about 10 o'clock that night. Could you tell me what was wrong and a cure for same?—H. T. O., Vernalis.

(We cannot say from your description what this was. It may have been one of several diseases.)

YOUNG PIGS WITH COUGH.

To the Editor: What causes and what shall I do for a cough in young pigs, two weeks old, that of course eat practically nothing except the milk from the sow? Except for the cough which bothers them quite a little they seem alright. —S. B. G., Princeton.

(Give each pig daily for four or five days one of the following powders: powdered potassium chlorate 36 grains, powdered licorice one drachm, mix and divide into 12 powders. If pigs seem to become loose in bowels stop powders and write again. See that the animals have clean dry quarters and enough litter at night.)

NECK WON'T HEAL.

To the Editor: I have a horse that had a bad sore on his neck. I finally got it healed wth silver nitrate solution, but now it keeps peeling off and irritates the horse, causing him to shake his head quite often. He is also getting thin and his hair looks rough. He is slightly constipated and for the past month has had an extraordinary appetite for salt. I am feeding him alfalfa hay and a little corn. I have looked for worms in his dung but so far have not found any. Will you please tell me how to cure his ailments?—W. H. M., Manteca.

(This is probably due to a diseased tissue being under the skin and this would have to be removed before any permanent results could be looked for. I would advise you to have a qualified veterinarian see the animal and if necessary operate. For the condition of the animal give the following powders and allow about a breakfast cup full of ground flaxseed and a little bran with oats once a day to loosen up the bowels. Powders—powdered iodium bicarbonate 3 oz., powdered nux vomica two drachms, powdered anice two ounces mix and divide into six powders and give one in feed twice daily.)

WATERING PRUNES FOR THE NEXT CROP.

(Continued from Page 345)

orchard observed on a short trip belongs to Hunter Bros. in the same section. It was irrigated the third week in September, when the leaves were already turning yellow and all had fallen from the topmost branches. Mr. Manning, who works for them, is authority for the statement that the yellowed leaves not too far gone showed a marked increase in green color, and certain it is that while he was finishing the second cultivation, October 1, following that irrigation, most of the leaves looked almost new.

Recuperation or Rest? — His neighbor, C. A. Braun, was also irrigating October 1, but for another purpose and not so thoroughly. Mr. Braun thinks perhaps the trees need a longer rest than they would get if they hold their leaves into November. His question is, whether it is better for the tree to use its strength a month or two additional each year recuperating, or whether it ought to shed its leaves and rest dormant during that time. We note that his trees were as thrifty and full of leaves as most any observed, and the leaves are likely to hang awhile on account of the light irrigation.

It will be remembered that we printed the favorable experience of Dr. M. T. Moore of Corning in the issue of May 16. He had watered last October and had the best prune prospects noticed on a trip through the Sacramento Valley.

The Leader of Them All

The First Completed Working Exhibit.

on the Panama-Pacific Exposition Grounds is the Ideal Green Feed Silo, 16 x 35 feet, 140 tons capacity, erected by the De Laval Dairy Supply Co., San Francisco.

The picture shows this IDEAL GREEN FEED SILO. It is the first of six silos to be erected and used by the Exposition Company during the Fair in connection with the Live Stock and Dairy Department.

Make Hay While the Sun is Not Shining

by putting your last crop of alfalfa in an Ideal Green Feed Silo.
YOU NEED NOT WAIT ON THE WEATHER MAN
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in which to put this last cutting of alfalfa. It will make better feed as silage than when cared for in the usual way. A great many Pacific Coast farmers have tried out this plan and are enthusiastic over it.

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AUCTION

34--PURE BREED JERSEYS--34

DISPERSAL SALE OF THE

LUCERNE FARM JERSEYS

The owner, Mr. W. W. Fisk, having leased his ranch, is retiring from the breeding business and has moved this herd for convenience of sale to

MODESTO

wheresale will be held
WEDNESDAY, OCTOBER 14th, at 10 A. M.

This will give dairymen and breeders a chance to attend this sale of fine pure bred Jerseys and also attend the State Dairymen's Association meeting which will commence in Modesto the following day.

This herd consists of
19 PURE BRED REGISTERED JERSEY COWS
8 PURE-BRED REGISTERED HEIFERS
from one to thirteen months old.
5 PURE BRED REGISTERED BULLS
from one to eleven months old.
The two herd bulls
SILVER MARQUIS and NOBLE'S WARDER

The bull, SILVER MARQUIS, is without doubt the best prospect in California. His dam, Golden Marquis Girlie, has a record of 14,000 lbs. of milk in one year with average test of 5.4, thus placing her in the foremost rank as a producer regardless of breed. This record was made with ordinary ranch care. His sire Golden Marquis of Oakhurst, a grandson of Golden Marquis, now dead, the last living son of the celebrated Golden Lad family. Silver Marquis is now 31 months old, large for his age and has a fine disposition. The sale will include five of his get that are true to form.

The bull, Noble's Warder, which will also be sold at this sale, is one of the best bred on the Coast. His sire, Imp. Noble Boy, was owned by the Hood Farm, and was sired by the great Noble of Oaklands Thus Noble's Warder carries the very best blood and breeders looking for a herd sire could not make a mistake on this bull.

The cows are all young and everyone of them a worker and without a doubt next year, with proper handling, should make remarkable records. The sale includes 12 daughters of Noble's Warder, three of which will be fresh by day of sale.

If large udders and true dairy form count for anything, this stock will surely make good. Herd positively guaranteed free from abortion.

On account of limited time in which to advertise this sale it will be impossible to issue catalog but tabulated pedigrees will be on grounds on day of sale. For any information in regard to this stock write the owner,

W. W. FISK, at Davis, Calif.

Arrangements for credit can be made by furnishing satisfactory bank references.
If you are in the market for highly bred, choice individuals, do not miss this

Genuine Closing Out Sale

THE SALE WILL BE CONDUCTED BY
COL. BEN A. RHOADES

1501-3-5 South Main Street — Los Angeles, Cal.

Pasteurizing for Safety.

[Paper read before Milk Conference by T. H. Bothell.]

Pasteurization is the term used to define the process of heating liquids, such as milk to a temperature which destroys a large per cent of the germ life contained in the liquids. The first record we have of the use of heat as a preservative was in 1860 when Pasteur found that heating wine to a temperature of 140 degrees Fahrenheit prevented it from souring. Later he applied the same process to beer with equally good results. It was not until 1886 that we have any historical record of heat being used for milk. That year Soxhlet, a noted chemist advised the heating of milk for infant feeding. While this may be the first printed record I have no doubt that the heating of milk was practiced by our mothers long before this. When a boy I have often seen mother heat the Saturday-night and the Sunday-morning's milk on the cookstove to make it keep sweet until Monday when it could be sent to the creamery. Where she learned that heating would prevent milk from souring I do not know, unless from her mother but I am sure that it was not from Soxhlet, Pasteur, or any other scientist. The scientific reason she did not know, further than the heating made the milk keep sweet. My mother was pasteurizing milk as surely and a whole lot better than many of our city pasteurizing plants. Pasteurization of milk, therefore, originated with our mothers. All our scientists have done is to give the scientific reason for the results obtained and aiding capital to commercialize the principles involved.

A Safety Measure.—At first pasteurization was employed by dairymen as a preservative only, but it has come to be looked upon by many of the students of the milk situation as a health measure to be enforced and directed by the health officers. Pasteurization cannot make dirty milk clean but it does lessen the dangerous effects of this dirty milk on the human system. Practically all pathogenic bacteria, which are liable to be carried by milk are destroyed or are so weakened by this process that they are harmless. Milk which has been heated to 140 degrees Fahrenheit for twenty minutes is, comparatively speaking, free from the living germs of tuberculosis, typhoid, diphtheria, scarlet fever and dysentery which have entered the milk through the medium of dirt. Their evil effects are thus checked and the milk, when it reaches the consumer can be in a better condition than if it were not pasteurized. Rosneau, in his book "The Milk Question," says, "There is not a single instance on record in which a milk borne epidemic is recorded from the use of pasteurized milk."

There are those who oppose pasteurization, taking the stand that they prefer clean milk to dirty pasteurized milk. A noted chemist, speaking at a public meeting where pure milk was being discussed, said: "I will take my milk clean and fresh, no cooked dirty milk for me." To make such statements shows that one is not conversant with the milk situation. It is not a matter of choice, which grade of milk we have, but it is a question of doing the best we can with what we have. Our milk supply is not what we desire, but simply affirming what we want is not going to make it so. It will take years, not months, of earnest work by men who are broad enough to see this great milk problem from all its many sides before we can hope to have a safe supply of milk for our larger cities. Meanwhile it is our duty to render the present supply as safe as possible; and our investigators of the milk question tell us that this must be done by pasteurization.

Why it will take time to bring about this desired condition and why it is desirable under present conditions to pasteurize, I wish to cite a few of the factors in milk production which are at present beyond our control, but which have the greatest influence on the quality of milk.

What is Pure Milk?—We hear a great deal about pure milk, but what is pure milk? It is a grade recognized the same by all? Pure milk is only a relative term which is often very vaguely used. I am not going to try to define it, but instead will use certified milk as my standard of purity.

What are the requisites for the certification of milk? (1) that it be drawn from healthy cows; (2) that it contain no pathogenic bacteria, and (3) that the total count of bacteria, other than pathogenic shall not exceed 10,000 per c. c. All the rules governing the production of certified milk are for the insurance that the milk have these three requisites. Taking certified milk as our standard of purity, does it always meet these requirements? Usually, but not always. In May, 1912, a dairy supplying one of our western cities, not certified, but worthy of certification, had an epidemic of scarlet fever traced to its door. This epidemic claimed as its victims the daughter of the dairyman, and nine other children of this city. The contamination came from a milker who had the disease so light that he worked two weeks before it was discovered. Does this mean that certified milk is unsafe? No, it only proves that they are not infallible. If such creep in where every care is exercised by men of training who know how to fight against such disasters what right have we to talk about the average milk supply being pure when it is handled by persons who have no conception of sanitation.

But why need we employ such persons to produce our milk? This brings up the question of labor. What class of men must the average dairyman employ today to do the milking and the handling of his milk? Are they the kind of men who are teachable? Hardly. He cannot hire men who would give the milk the desired attention; for such men can obtain more desirable employment. The personality of the men on a dairy largely determines the quality of the milk there produced; and until men can be sesured who give the desired care we cannot expect much improvement in our dairies.

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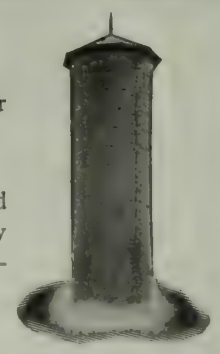

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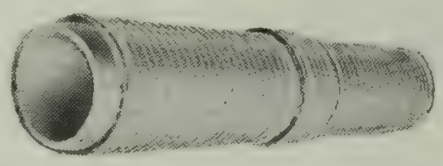

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We have on hand at all times the largest and best lot of heavy draft Stallions and Mares, both American bred and imported, to be found any place in the West. The reason we sell more horses than all importers combined on the Pacific Coast is that we save our customers from $500 to $1000 on each horse, and sell more genuine horse for the money. We give a 60 per cent guarantee.. We give a four-year contract that is good at home. Is that not better than buying from some firm 2000 or 3000 miles away or a transient salesman? We sold 107 head last year. If you are in need of a horse in your locality, let us know. We expect a large shipment of horses in the next thirty days

50 COWS AVERAGE 717 POUNDS BUTTER

This is the average of the 50 cows that have completed yearly semi-official tests to date in our herd, and only 15 at mature age.

Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.

INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as $150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention.

A. W. MORRIS & SONS CORPORATION,

Holstein-Friesian Cattle Woodland, Cal.

Oak Grove Berkshires

Cholera Immune

Our herd is Cholera Immune, the only immune Berkshire herd in the State.

Five herd boars in use and they are second to none on the coast. Our sows are of equal merit.

We have at present some 300 Berkshires and we know that we can supply what you want. **Write us or call.**

Oak Grove Dairy Farm

H. G. ARMSTRONG, Prop. WOODLAND, CAL.

Milk production has an economical as well as a sanitary side, and while some have not been prone to recognize this economical side it, nevertheless, is a very important one. The production of pure milk requires labor, equipment, and intelligence, each of which has an economic value, and the more of these which are used in the production of milk the higher priced that quart of milk must sell. Whether the public can afford to pay 15 cents per quart, the price of certified milk, I do not care to discuss, but one thing is sure, they will not do so. The public demands an 8 and 10-cent grade of milk and this demand must be met. We cannot expect the expenditure of money, or its equivalent by dairymen if the investors do not receive a just recompense in return.

Pure Milk Scarce.—Taking the first requirement mentioned for certification of milk, that is—"Milk drawn from healthy cows." What city of 100,000 can boast of a milk supply from healthy cows? Not many. Tuberculosis is in practically every community. It is a disease which has, so far, been very difficult to eradicate. It is easy to reason that the dairymen will be better off if they would eliminate their tubercular cows. I agree that if the dairymen would eradicate this disease from their herds in ten years they would be better off. But the dairyman is living today, not tomorrow and it is hard to get him to take a friendly attitude regarding this disease. It takes one who has been reared on a farm to realize the dairyman's standpoint. When testing for tuberculosis was being agitated some years ago in Iowa I have a very vivid recollection of seeing my mother worrying for fear that the test would be forced on our herd and that it might prove to be as badly diseased as some of the herds reported in the papers. This would have meant the loss of many cows, which were the means we expected to pay off the mortgage on the farm, and the loss of which might have meant the loss of our home. Can you get from this a glimpse of the dairyman's side of this tubercular question? They do not fully realize its meaning or importance. The keeping of tubercular cows is not criminal with the majority, it is simply self-preservation. There must be more education along this line and laws that will protect and not destroy the farmers' homes before we can expect them to submit kindly to the eradication of tuberculosis.

Pasteurization the present solution.—If the dairyman cannot obtain the help necessary for the production of pure milk at the present price; if the public will not pay the price required for the production of certified milk; if the present status of the tubercular situation is such that it is practically impossible to force the tuberculin test, what is to be done? We must do all we can to improve the conditions on the dairies, but meanwhile let us render the milk we have just as safe as it is practical to do so, and in order to do this we must resort to Pasteurization.

(To be concluded.)

CONSIGNMENT SALE ADVANTAGES.

[Written for PACIFIC RURAL PRESS.]

California has been severely criticised by many for having so few pure bred dairy cows to her credit. While this condition has been gradually improving, the scarcity of breeding animals has prevented our pure bred business from growing more rapidly. In fact with some breeds, notably the Holsteins, it has been almost an impossibility to secure female stock in this state, in sufficient quantities for foundation purposes.

It is for that reason more than any other one thing that a few of the Holstein breeders have decided to hold at Hanford, this month, the first consignment sale of such stock that has ever been offered the buying public in this State. They realize that to further the interests of that breed, they must afford the prospective buyer an opportunity of securing a selection of representative animals.

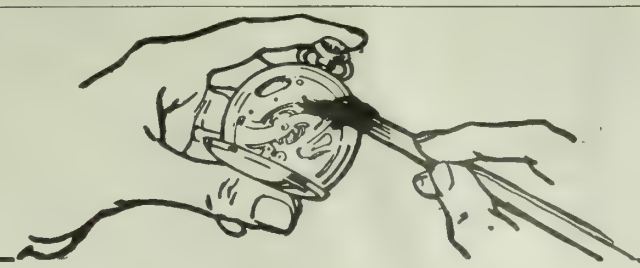
In this respect there is little doubt that the consignment sale is in a class by itself, as it brings together animals of different breeding, consigned by breeders whose personal recommendation stands back of each animal. When one considers that such animals are entirely at the mercy of the buyer, in so far as the price is concerned, it is evident that each breeder must sustain his reputation by selling only such animals as will suit the buyers, else the price will suffer and also the breeders' prestige for quality.

From the buyer's standpoint, it will be seen that by spending one day at such a sale he can pick from a number of herds, all that the consignors have for sale, thereby saving himself considerable expense as well as time consumed in traveling over the State. Another thing which everyone admits is of considerable importance in purchasing pure bred animals, is the comparison which is much more easily accomplished where the animals are grouped at a sale of this kind, than when they are so far apart as when purchased otherwise.

To the breeder, the consignment sale also offers special inducements, as it is sufficiently cooperative to allow each breeder alike the benefit of finding the right customer. That is, the overhead charges of holding the sale are very little larger than they would be for smaller individual sales, and he is able to reach a greater buying force than would be the case were he to hold his sale individually, with an equal expenditure.

There is little doubt but that the Holstein breeders have taken a step in the right direction in holding this sale at the present time, when new herds are so badly needed; and it would seem that the promotion of more of these sales by the different breed associations in this State, would aid in no small way the building up of the livestock industry of the State. Such sales of swine and horses at the present time would certainly be timely and appreciated by the buying public.

A. L. Leitch has bought forty-one high producing Holsteins to eat the alfalfa on his ranch near Oakdale. He says it pays better to sell alfalfa in the form of butter.



You Wouldn't Put Axle Grease on Your Watch

Isn't it almost as ridiculous to use ordinary farm oil on your cream separator? It's delicate mechanism demands a special oil. We make good harvester and gas engine oils, but we do not recommend them for separators. If your separator is to do its best work, you must lubricate it with

Standard Hand Separator Oil

It is made especially to suit the peculiar mechanism of cream separators. It is of just the right body. It does not "gum." It keeps the bowl running swiftly and smoothly—you get *all* the cream. There is no better oil—regardless of price. Dealers everywhere.

Standard Oil Company
(California)

SALVADOR STOCK FARM

SHIRE HORSES

ANOTHER VICTORY FOR THE SHIRES

At the State Fair just closed, the Shire Stallion SEVERN PILOT, imported by the Salvador Stock Farm, won the Stallion Registration Board's trophy and $100 for the best draft stallion of any breed to be shown with three of his get.

If you want to raise draft horses, get a Shirt stallion.

For Prices, Etc., Address

Salvador Stock Farm
HENRY WHEATLEY
Napa, Calif.

HILLCREST STOCK FARM
Davis, California

KING LANCASTER.
Son of King Edward, Grand Champion Bull California State Fair 1909-1910-1911. The Only Bull a Three Times Grand Champion.
KNIGHT PERFECTION, SIRE OF
Greenwood Knight II, Grand Champion 1912
Greenwood Knight, Grand Champion 1913.

T. S. GLIDE, Proprietor

Breeder of Shorthorn Cattle - The Famous Blacow-Roberts-Glide French Merinos and Purebred Shropshire Rams.

SIRES IN SERVICE:
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Greenwood Knight, 337,393
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Range Raised Young Shorthorn Bulls for Sale. Single or carload lots.

WAUKEEN STOCK FARM
Offers For Sale Some Choice
JERSEY CALVES
From Tested Dams. Inquire of
Modesto **Chas. N. Odell** California

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With Orders Amounting to $75.00

We want everyone to have one of our BUILDING MATERIAL CATALOGS. We are going to give 750 sq. ft of 2-inch Mesh Poultry Wire with every $75.00 order. Send Coupon below FOR ONE OF OUR BUILDING MATERIAL CATALOGS. Look over the bargains offered at a saving of 25 per cent to 40 per cent. Send us your order for any article or articles listed. If your order amounts to $75.00 we will immediately ship the fencing ABSOLUTELY FREE. If your order does not amount to $75.00 save your receipts until you have purchased this amount from us, and with the last order we will ship the Fencing, ABSOLUTELY FREE. Your order need not amount to $75.00 in a specified time to receive this FREE FENCING It is only necessary that you make your first purchase with us by January 1st, 1916. CAN YOU APPRECIATE WHAT WE ARE OFFERING YOU?

Our prices on HIGH GRADE BUILDING MATERIAL are always the lowest. Our Million Dollar Stock enables us to sell under the market. Convince yourself!

Read this small list, below, carefully. It is to give you an idea of how we sell

Building Material

HIGH TANK

Toilet Combinations complete to floor; special bankrupt stock. **$10.00**

Low down enamel steel toilet combination, complete to floor . **$12.50**

Low down vitreous china closet combination. **$16.00**

Special reductions on Kitchen Sinks: 20x30, No. 2; 18x36, No. 2 **$2.75**

Corrugated Galvanized Iron, special price, until further notice, all lengths from 6 to 10 feet; per 100 square feet **$3.65**

Roofing paper: 1 ply sanded **$1.00**

2 ply sanded **$2.75**

Samples sent on request.

Wall Board: 650 pounds to the thousand. No. 2, regular price, $25, cut to per thousand sq. ft.... **$19.00**

Standard line House Paint, guaranteed. All colors, per gallon **$1.50**

Shingle stain, all colors and black..... **$0.50**

Graphite Roof Paint. per gallon **$1.00**

Interior Oil Stains per gallon..... **$1.00**

Everything else in the paint line at proportionate prices. We carry everything in BUILDING MATERIAL. Our stock is complete.

THE WAY TO OBTAIN FREE FENCING

LUMBER

We positively have the best offerings in Lumber, both in rough and finish, in Southern California. You lose if you do not write us for estimates.

ALWAYS THE LOWEST ON SASH AND DOORS

We carry everything in this department. Two light, double hung windows, 1¾ inches thick. Best Quality American window glass, all sizes ..... **60c UP**

No. 1 Colonial Door, kilned-dried Oregon Pine. This is a special value, all stock sizes .... **$1.50 UP**

SECOND HAND BUILDING MATERIAL CARRIED ONLY BY WHITING WRECKING CO.

Two-inch dimension Lumber up to 2x12, up to 20 feet long, per M. **$12.00**

Other sizes at similar prices.

Write for estimates.

Two-in. tongue and groove, 8x10 in wide, Oregon Pine per M..... **$12.00**

⅝x4 Maple Flooring, fine condition; special per M... **$40.00**

950-gallon Cylindric Tank; new condition; worth $35.00 **$18.00**

Roofing Paper Remnants, from 90 to 125 feet to the roll; per..... roll **$1.00**

NURSERYMEN!! Here is a chance to buy a lath at 100 per cent discount; per M..... **$1.75**

5000 feet of quarter-inch Black Gas Pipe. Good as new ..... per foot **$0.03**

Everything in Second-hand Lumber.

Be sure to write all correspondence for second-hand building material to

Whiting Wrecking Co.
9th & San Pedro Sts.
Los Angeles, Cal.

Please Send FREE Your Catalog Including FREE OFFER

Name .....[P.R.P]

City .....

Whiting-Mead Commercial Company
9th St. and Maple Ave. Los Angeles, Cal.

Poultry for Profit

[Written for the PACIFIC RURAL PRESS, by Susan Swaysgood, Pomona, Cal.]

FORCING IMMATURE PULLETS.

This is a rather slow time of year for the poultry man. The pullets that should lay fail to produce the goods, and the owner getting out of patience wants to do something to help along. All right, help them along with a little more green feed; a little extra beef scrap or fish meal; but if you have any respect for your chickens don't begin feeding strong dope to get them to lay. When a pullet is fully matured, if she does not lay with good feed and care, there is something wrong with her, but before you condemn her be sure that she is mature. A pullet can no more lay until she is mature, than an apple can fall before it is ripe, unless something unnatural causes it to fall. Sometimes the ripening period of pullets is slow from different causes, and they need help to develop, but drugs are among the unnatural stimulants, and should not be resorted to.

There are many good feeders, so far as quantity goes, that can't understand why their pullets do not lay quite as early as they should. The trouble is that they have not given the food in sufficient variety. It has been too much of one material. If you feed wheat for grain, then make a mash of wheat bran and shorts, it is all the same fixed up a little different. Vary the material by adding ground barley, ground oats, or ground corn even, and don't fail to add some animal food. It is suprising the many inquiries that we get telling of poor luck, and in nearly all cases the animal food is entirely left out.

It cannot be too often told that poultry, ducks and turkeys must have animal food of some kind if they are to do their best.

But the very best thing I know of to mature pullets, and this means when the pullets are well grown, is milk. Boil a mess of potatoes, pour off the water and use milk, sour or buttermilk will do, in place of water, then mix up your usual mash feed with this milk and boiled potatoes; let them have milk to drink, too, if you have it; and it won't be long till your pullets will lay.

This may be fed either morning or night, but night is preferable. Give them all they can tuck in them just before roosting time. The one trouble with feeding condiments such as cayenne, mustard and things of that kind, is that they act as a stimulant; and once accustomed to being stimulated, the hen's system fails to respond without it. It is a case of no stimulant, no egg; because the system is depleted by the absence of that one material. Besides, if pullets are made to lay before they are fully matured, they never amount to anything. True you can say, "My pullets laid at such and such an age," but take my word for it, they won't lay enough eggs to entitle them to any credit on your bank account.

CREOSOTE STAIN OR WHITEWASH.

Is creosote stain used for inside and outside of poultry buildings, and will you please publish formula for same? Is it superior to whitewash?

Mrs. H. E. D.

(Creosote stain is superior to whitewash in some ways. It kills mites and prevents them from breeding if sprayed about twice a year.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MAMMOTH BRONZE TURKEYS—Large reductions offered on old stock for short time only. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed Hart.)

HICKS JUBILEE HATCHERY—36,000 capacity this season. Now booking orders. White Leghorns and Black Minorcas our specialty. Instructions in caring for young chicks free. W. J. Hicks. R. 2, Petaluma, Cal.

PINE TREE POULTRY FARM, Los Gatos, Cal.—Hatching eggs from S. C. White Leghorns. Selected stock. Ready December 1st. $6 per 100; $50 per 1000. Order now.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 396, Los Gatos, Cal.

PETALUMA HATCHERY—Now booking orders for Fall. August, September and October chicks are highly profitable. Send for circular. L. W. Clark, Petaluma, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

INCUBATOR CHICKS—White Rocks and White Leghorns. High class stock. Send for booklet of prices. Mahajo Farm, Box 597, Sacramento, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, $7.50 per 15; utility, $2 per 15; $10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. G. W. Suits, 378 Bandini Ave., Riverside, Cal.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed Hart.)

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

HOPLAND STOCK FARM—Incubator chicks, S. C White Leghorns and White Plymouth Rocks. Hopland, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

FOR SALE—Three months old and up. White Leghorn pullets. At all times. P. O. Box 442, Petaluma, Cal.

LANGSHANS.—Best on coast. Stock. Settings booked now. Lohr, 689 Kansas St., San Francisco.

ORPINGTONS—BUFF AND WHITE—Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

PURE-BRED WHITE ROCKS. Mrs. J. B. Tupper, Ceres, Cal.

FOR SALE—Three months old and up. White Leghorn pullets. At all times. P. O. Box 442, Petaluma, Cal.

BUFF ORPINGTON COCKERELS ready for service. O. L. Divens, Dos Palos, Cal.

Cockerels. M. Worley, Palermo, Cal.

FOR SALE—Pure bred Rhode Island Red

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MOTORS

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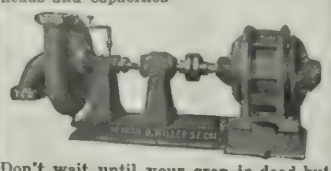
Miller Horizantal Automatically Water Balanced Enclosed Runner Ring Oiling Direct Connected Pumps make ideal pumping units. Built and guaranteed for all heads and capacities



Don't wait until your crop is dead but write us NOW and ask for catalog and information blank. We are experts and our experience is at your command.

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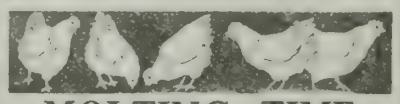

MOLTING TIME

is apt to be a time of trouble with your hens.

COULSON'S EGG FOOD

will help to keep them in good condition, saving loss and worry.
A healthy hen will molt quickly.

COULSON COMPANY
PETALUMA, CAL.

FREE BOOK

Raising Calves without milk. Everything you need for stock and poultry raising. Write today.
F. F. SMITH & CO.,
1006 J St., Sacramento.

HOPLAND PULLETS

1000 S. C. W. L. Pullets, 2 mos. old.....$6.00 per doz.
1000 S. C. W. L. Pullets, 3 mos. old.....$8.00 per doz.
Breeding Cockerels $18.00 per doz.
Hopland Stock Farm
POULTRY DEPARTMENT HOPLAND, CAL.

BABY CHICKS

Standard Bred.

The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price list and pamphlet free upon request. Now booking orders for Fall and Spring delivery.
THOMAS HATCHERY, Petaluma, Cal., Route C.

Whitewash also kills mites, but after it has been on the walls a few days, it is entirely harmless to mites and other insects; the creosote stain keeps its qualities much longer. It is used both inside and outside and also on the roof. Crude oil and crude carbolic acid form the base, one quart of the crude carbolic to one five gallon can of the crude oil. After they are mixed, stir in enough "prince metallic" to thicken to the consistency of cream, if to be put on with a brush, but if to be sprayed it must be thin enough to work in the pump. You will have to use some judgment in that. Some people prefer to spray because it is quicker, and others prefer a brush because it is more economical. Spraying uses about three times the quantity as when put on with a brush.)

SPRAYING FOR PROSPEROUS APPEARANCE.

And by the way, it is a fine thing if you can possibly get at it, to spray all the chicken houses, sheds, and even cattle sheds. There is not anything that makes a farm home look so prosperous as neat, clean buildings of one color. The "prince metallic" used in the above formula makes the buildings a dark wine color. I don't know what kind of coloring is used for brown or green but these stains are all dark because the base is crude oil in every case. I don't care what dealers say to the contrary. A neighbor of mine paid 85 cents a gallon for some and I made my own at a cost of 20 cents, and you could not tell them apart, neither before putting on the wall nor after. Now 65 cents a gallon is pretty good wages for mixing. I don't know of anything a farmer can do that will bring him in better wages, and I have been in some kind of farming for more than fifty years. You can mix a lot in an hour, and it's jolly good fun to hide dirt with it and see your buildings look "spick and span." Makes the kids feel good too, to see their home place put on new clothes once in a while, and when it can be done so cheap, why it looks foolish to have dilapidated looking buildings. Looks like a person had lost their grip and was on the edge of the grave. This neighbor of mine started in to spray his dwelling house, he said all the builders in Los Angeles used a spray, and he would do the same. He borrowed my spray pump and used up about twelve gallons, several of which was on his clothing. Then he began to figure out how many more gallons at 85 cents, and total it up and he got scared and went and bought a brush and finished the job with about ten gallons. He made good wages on the brush. You see, that was economy.

POULTRY SHOW NOTES.

The San Francisco Poultrymen's Association have decided to pay particular attention to exhibits of poultry supply and manufacturing houses, at their show to be held at the Auditorium, San Francisco, December 8 to 13. Charges for space and lights have been reduced to about actual cost to the association, in an endeavor to make these exhibits the largest of any show on the coast.

A new thing for California poultry shows will be inaugurated at the coming San Francisco poultry show, in the shape of pen exhibits. These pens will be about 10 feet square and will be so arranged on the floor that the visitor can see at a glance the birds in their natural mode of living. This feature has been one of the big attractions at the Madison Square Garden poultry show in New York, and will add much to the beauty of the coming show, which promises to be one of the big shows of the season on this coast.

The 11th annual poultry show given by the Alameda County Poultrymen's Ass'n will be held at the State Armory, Oakland, November 24 to 29 inclusive. The word has been given out that the association expects to give one of the best exhibitions on the coast this year.

Mr. C. G. Hinds is again show secretary, and with C. E. Ross as superintendent, the quality and success of the show is insured. The judges are Russell, Luce and Venn. As in past years the pigeon department will be handled by the California Pigeon Club.

This association boasts of having the keenest competition and the best sale show on the coast, and a fancier who can win there can win anywhere.

BRING THE FOLKS TO

California

LOW COLONIST FARES
FROM EASTERN POINTS
TO CALIFORNIA DESTINATIONS

ONE WAY FARES

From CHICAGO $38.00
" KANSAS CITY 30.00
" ST. LOUIS 35.60
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Corresponding Low Fares from Certain Other Points

SALE DATES

SEPTEMBER 24th TO OCTOBER 8th, 1914, INCLUSIVE
MONEY MAY BE DEPOSITED
With any Western Pacific Agent and ticket will be furnished by wire without extra cost

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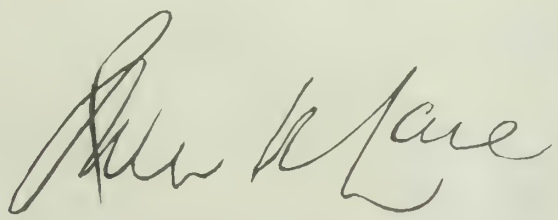
From FRANKLIN K. LANE
Secretary of the Interior

"I trust the State of California will elect James D. Phelan and thus realize its opportunity to secure a United States Senator who can, with force and dignity, uphold the interests of California and the policies of the President."



JAMES D. PHELAN

JAMES D. PHELAN—three times Mayor of San Francisco.

Prevented renewal of franchise of old Geary street railway, San Francisco, thus making present successful municipal line possible.

Appointed first woman who ever held an important public position in San Francisco.

Served as regent of the University of California.

Commissioner to secure re-enactment of the Geary Asiatic Exclusion Law.

Commissioner for Hetch Hetchy legislation before Congress to secure a mountain water supply for the cities around San Francisco Bay.

Commissioner to Europe by appointment of President Wilson to support the United States Government's invitation to foreign countries to participate in the Panama-Pacific Exposition.

Secured appropriation of $500,000 for United States building at the Panama-Pacific Exposition.

Declined ambassadorship to one of the great European nations, preferring service at home.

Led in the fight for a new charter for San Francisco, which insured home rule, civil service reform, responsible government and municipal railroads.

Raised standard of pay for laborers in the city employ.

Head of the San Francisco Relief Committee in the disaster of 1906. Appointed by the President custodian of the relief fund aggregating $10,000,000.

Worked and spoke before the Legislature for the enactment of an anti-alien land ownership law.

Experienced, capable and untrammelled, he would have but one client in Washington, the people of his native State.

Elect the man who can help California in Washington

The Home Circle

AN OLD MAID'S ENLIGHTENMENT.

I can remember when I used to think it would be so nice to be "Mrs. Somebody," and so unfortunate never to be "Mrs. Anybody," but that was years ago; I won't say how many. I live with my brother, Simon Andrew, in one of the farming districts of Western Connecticut. Simon Andrews is a bachelor, in the true sense of the word, for I have known him to walk a mile out of his way to avoid speaking to a woman.

One day when I was tying up my catnip and boneset into bunches to dry for winter use, who should come in but the Spriggins girls, brimful of fun and laughter. I knew they had come in quietly, thinking to catch Simon Andrew in the house, but he was clear down in the lower lots before they had the gate unfastened.

Of course they had an errand—they almost always have. I've known 'em to come in as many as three times a week to get my receipt for preserves, and I haven't a doubt if you had asked them the next morning how the receipt read, they could not have told a word of it. I wonder why it is that bachelors are such a curiosity and so much sought after by young folks?

Well, as I said, the Spriggins girls came in, and just as they were going they almost took my breath away by saying, "O, Miss Rachel, did you know that Roscoe Miller and his family are in town—just came from out West to visit Roscoe's father?" I managed not to show my astonishment much and the girls finally started for home.

You see, everybody has his or her little story sometime in life, and I had had mine. This news brought it all back to me. I thought of the four-leafed clover Roscoe had given me so long ago, that I had carried in my bosom for a year after, and as time passed, I finally consigned to the bottom of the old chest in the garret. I had thought of burning it, but somehow I didn't. It was the only souvenir of my youthful dream.

Roscoe didn't spring from a very high family, and his older brothers had all turned out "black sheep," so everyone looked down on Roscoe and thought it was wrong in me to accept attentions from him; but I was young, only seventeen, and the more they said against him, the more I loved him and the surer I was that he was all that I would wish him to be. Wouldn't I believe Roscoe before all the world? What if folks did say he frequented the tavern? And what if his breath did sometimes have a peculiar smell? Didn't he solemnly swear that he did not taste liquor? What if his family did have black sheep? Was that Roscoe's fault?

Some seem to think it is particular credit to themselves because the Lord saw fit to give them a right minded ancestry. I don't think it is right to condemn the whole flock because of the color of one, so, although I have lived to be thankful that Roscoe and I parted at last, I hold to it that his case was the exception rather than the rule.

When I look back through the mists of time, it seems to me like a silly little dream that I would like to forget forever, but it was hard to bear then, and even now the mention of his name had set me into an uneasy state of mind, and I found myself wondering how he looked, and what sort of a wife he had chosen.

Well, the next day was Sunday, and I felt a little curious to see Roscoe and his family. I knew they would come to church, so I hurried Simon Andrew and went early so as to be there when they came. And they did come! I heard the old familiar step, which time had not yet changed. I felt, rather than saw him pass our pew, followed by the clerk of several pairs of feet of assorted sizes.

I took a fleeting glance. And O! to think I had saved that clover leaf all these years. Did I, Rachel Welton, ever dream of marrying such a man as that? Old, gray and unkempt, with the unmistakable marks of dissipation on his face; an insignificant looking, shabbily-dressed woman on one side and several open-mouthed, stupid-looking children on the other.

I looked at Simon Andrew, but he was contemplating the scratch he got on his boot while walking down and I knew he would be in agony till he got home and polished it over. I looked over at Deacon Hobb's widow sitting with her scapegrace of a son, that had brought the deacon's gray hairs down in sorrow to the grave. Then my eyes wandered over to the Dobsons' pew where Mrs. Dobson's three-years-old boy was mussing her bonnet-strings and worrying the life out of her. I finished my survey with a glance at the Spriggins girls, "sweet and fresh as the morning dawn," brimful of life and health and fun, with the making or marring of their future lives in their own innocent hands, and I thought to myself, "I would not change places even with them." Then I fell to folding my best handkerchief, and I think I folded more of contentment into that small square before the service began, than I ever knew in my life before and I am sure I raised a heartfelt prayer of thankfulness to Heaven that I was an "old maid."

When I reached home, the first thing I did was to throw that clover leaf into the fire, which I lighted on the old stone hearth, and when the ashes and smoke went up the broad mouth of the old stone chimney they took with them the last of an old maid's dream.—Anna D. Gray, in Farm and Home.

DOMESTIC HINTS.

Apple Butter.—Boil three gallons of cider down to one-fourth of the quantity. Pare and core as many apples as the cider will cover, divide the cider and put equal parts in two kettles on the fire. Place the apples in one kettle, and as they boil down, pour over them the cider from the other kettle. Boil twelve hours until smooth, add ground cloves, allspice, cinnamon, brown sugar. Then boil again, stirring constantly. When sufficiently done it will stick to the spoon when held up.

Stuffed Tomatoes.—Take large tomatoes and scald and skin them care-

In Health or Illness

A person, well, sick or convalescent, can drink Ghirardelli's Ground Chocolate when other beverages would be out of the question. Tell the grocer to send you a can today. Serve it for tomorrow's breakfast, and note how pleased the family will be and how much more vim than ordinary they'll have to begin the day's work. Very economical.

In hermetically sealed tins.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

D. GHIRARDELLI CO.
Since 1852 San Francisco

We will maintain our usual prices during 1914.

GHIRARDELLI'S GROUND CHOCOLATE

Gas for the Country Home
COOKING---HEATING---LIGHTING

A Standard Individual Gas Plant

Will supply up to 5000 cu. ft. of gas per hour from 60 gravity gasoline, by a cold process. Plants have capacity enough to sell gas to your neighbors or supply gas for a small town. Simple and practical in construction.
Sold under guarantee and installed on approval.
Send for information regarding the Standard.

Standard Gas Generator Company,
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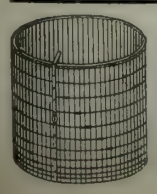

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fully. Remove the inside. Take the dust of three crackers, the white of one egg, two slices of onion minced very fine, a little parsley, salt to taste, add a little cayenne pepper, mix with the inside of the tomato and stuff the tomato well up to the top with your mixture and bake in a quick oven.

Pumpkin Pies.—Pare a small pumpkin, take out seeds, steam until soft and press through a colander, beat in three eggs, three tablespoonfuls of molasses, two tablespoonfuls of cinnamon, one of ginger, two teaspoonfuls of salt and two quarts of hot milk. If more sweetening is needed, add a little sugar. Bake with an under crust only.

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Its paramount motives are to engender united interest in the work of beautifying California and to foster it; to aid and guide all who may be in need of timely suggestions; to give intelligent information; to provide the source of supply and create the demand for seasonable and attractive flowers and decorative plants and trees; and to make it the authoritative exponent of ornamental garden culture in this region.

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HOWARD & SMITH

OLIVE AND NINTH STREETS LOS ANGELES, CALIFORNIA.

The Markets.

(Unless otherwise noted prices quoted are f. o. b. San Francisco.)

San Francisco, October 7, 1914.

WHEAT.

With wheat piling up in northern warehouses the market has an easier tone, and buyers here are taking little interest. The local market is in fact extremely dull, and prices for all varieties have been marked down rather sharply.

California Club, ctl	$1.65@1.70
Forty-fold	1.75@1.80
Northern Club	1.65@1.70
Northern Bluestem	1.90@1.95
Northern Red	1.65@1.85

BARLEY.

With continued business for export, brewing and shipping grain holds up fairly well, but feed is dull, with a further slight decline. Offerings are increasing here, and the heavy arrivals at warehouse points cause some desire to sell.

Brewing & Shipping	$1.15 @1.20
Choice Feed, per ctl	1.10 @1.12½
Common Feed	Nominal

OATS.

Red seed oats show a wider range, the top figure being for choice recleaned stock. White oats are a little lower. There are a good many inquiries for seed, but on the whole business is quiet.

Red Feed	$1.40 @1.50
Seed	1.65 @1.90
Gray	Nominal
White	1.50 @1.55
Black Seed	1.75 @2.25

CORN.

Egyptian and Milo are again quoted, after being out of the market for some time. Eastern yellow is unchanged, with little movement, and no California corn of any consequence is appearing here.

California Yellow	Nominal
Eastern Yellow	$1.85 @1.95
Eastern White	Nominal
Egyptian	1.70 @1.75
Milo Maize	1.75 @1.80

RYE.

Values are entirely nominal, as there is little of this grain on hand, and offerings receive no attention.

Rye, per ctl ..... Nominal

BEANS.

The bean market again shows numerous changes in prices, several varieties having recovered somewhat more firmness than was shown last week. On the whole, however, the situation is easy, as shipments are rapidly increasing, crops are large, and buyers now are disposed to hold off. This waiting tendency is due largely to scarcity of money, as well as to the belief that the crop does not warrant very high prices in most lines.

The October price for limas, showing a slight reduction, has been well received in the east, and quite an active movement is reported in this line.

(On wharf.)

Bayos: Cal., per ctl	$4.00 @4.25
Mexican	3.00 @3.50
Blackeyes	4.00 @4.25
Cranberry Beans	4.00 @4.25
Horse Beans	3.00 @3.50
Small Whites	4.50 @4.75
Large White	3.75 @3.90
Limas	5.40 @5.60
Pea	4.25 @4.50
Pink	3.75 @3.90
Red Kidneys	4.00 @4.25
Mexican Red	5.00 @5.25

SEEDS.

There is very little business at present in the varieties quoted. Local prices for alfalfa have not been definitely established, though there has been some movement in the country, and some large shipments are going to South America.

Alfalfa	Nominal
Crown Mustard, per lb	Nominal
Canary	Nominal
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

The top price of family extras has been marked down a little locally, and the market is hardly as firm as it was, prices having taken quite a drop in other quarters, in sympathy with the wheat market.

Cal. Family Extras	$6.60 @6.80
Bakers' Extras	5.50 @6.00

HAY.

The hay situation shows practically no change, values standing as before, with arrivals practically the same. Offerings of the medium and poorer grades are in excess of the demand, and are moved with difficulty, often below the regular range of values. With the approach of the rainy season, there is even greater pressure to sell. The trade has been considerably assisted by export business, which is keeping up fairly well.

No. 1 Wheat, or Wheat and Oats	$8.00@ 9.00
do No. 2	6.00@ 7.50
Barley	6.00@ 8.00
Tame Oats	7.00@11.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.00
Stock Hay	4.50@ 5.00
Straw, per bale	30@ 45c

FEEDSTUFFS.

The output of bran, shorts and middlings is increasing, and the two latter are lower. Bran has been scarce, and the old price still holds, though some decline is expected as arrivals increase. Cocoanut meal is again lower.

Alfalfa-Molasses Meal, per ton	$19.00@20.00
Alfalfa Meal, per ton	13.00@14.00
Bran, per ton	30.00@31.00
Oilcake Meal	33.00@35.00
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	24.00@25.00
Rolled Oats	32.00@33.00
Shorts	32.00@33.00

VEGETABLES.

Comparatively few changes are noted this week. Business in general is quiet, but offerings in many lines lighter, keeping values fairly steady. String and wax beans, however, are lower, being temporarily in oversupply. Chili peppers also are lower, with rather large offerings, and a light call for green corn has brought a reduction of the top figure. Eggplant shows a wider range, as choice lots are very quickly disposed of. Tomatoes have recovered somewhat from last week's depression, though prices are still very low, and few offerings will bring the outside figure.

Green Peppers, bell lugs	30@ 40c
Green Peppers, Chili	40@ 50c
Carrots, per sack	35@ 50c
Tomatoes, lugs	20@ 40c
Beans: Wax, per lb	1@ 3c
String	1@ 3c
Lima	2 @2½c
Cucumbers, lugs	25@ 40c
Eggplant, lugs	25@ 50c
Green corn, sack	1.00@ 1.75
Summer Squash, box	25@ 35c
Cream Squash, box	35c
Okra, box	25@ 40c
Celery, doz	15@ 30c
Sprouts lb	3@ 4c

POTATOES AND ONIONS.

Prices in this line show very little change, and the local market remains rather quiet, with abundant supplies from the river district. Some improvement is looked for shortly, however, owing to the usual buying movement among dealers to cover winter requirements.

Potatoes: Salinas, ctl	$1.45@1.60
River Burbanks, ctl	70c@$1.00
Sweet Potatoes, ctl	1.40@ 1.50
Onions: Yellow, sack	40@ 50c
Garlic, per lb	10@ 15c

POULTRY.

Dealers describe the local market as very dull, and with offerings of both local and eastern stock keeping about up to the recent average, values are easy. Broilers and fryers have been marked down a little, and other lines are not easily cleaned up at the present figures. Turkeys receive little attention. Squabs are scarce and higher.

Turkeys, lb	19 @24 c
Large Broilers	20 @22 c
Small Broilers, per lb	20 @23 c
Fryers, per lb	19 @20 c
Hens, large, per lb	17 @18 c
Hens, extra, er lb	17 @18 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb	18 @20 c
Squabs, per doz	2.00@ 3.00
Geese, per pair	2.00@ 3.00
Ducks, doz	4.50@ 8.00

BUTTER.

The only change has been a 1-2c. advance in prime firsts, the first and extra grades having stood at the same level as a week ago. Supplies continue quite liberal, and with the shipping movement greatly curtailed there is little strength to the market.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	29	29	29	29	29	29
Prime	27	27	27	27	27½	27½
Firsts	26	26	26	26	26	26

EGGS.

Prices took another drop about the end of last week, but have stiffened up again, with a slight reduction in offerings of the extra grade. Pullets, however, remain low, and the market seems rather slow to make the seasonable advance.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	40½	39½	39½	42	43	42
Selected Pullets	32	31	31	32	32	31½

CHEESE.

Arrivals of northern stock have been quite heavy for the last few days, and the market for local grades is easier, with a sharp decline in flats, and a slight drop drop in Y. A.'s and Monterey cheese.

Fancy California Flats, per lb	12½c
New Young Americas, fancy	15 c
Monterey Cheese	15@16c

At Los Angeles the dairy produce markets for the past week have been as follows:

Butter:	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	40½	39½	39½	42	43	43
Eggs	36	36	38	40	40	40
Cal. Sheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

The local fruit business has been rather quiet all around, but offerings of summer fruits are diminishing, and prices are fairly well maintained. All lines of berries are higher, as both raspberries and strawberries are in reduced supply, and the first offerings of cranberries have been pretty well absorbed. Apples are moving slowly, and show little strength as to prices. Some choice Newtown pippins are selling up to 90c., and Gravensteins up to $1, but belleflowers and spitzenbergs are lower.

Fewer peaches are coming in now, and choice wrapped fruit, on the average, brings better prices, though the demand is limited. Black figs are a little lower. Pomegranates from the valley are lower, though some fancy southern stock is held at 75c. to $1.25. Ordinary persimmons also are lower. Melons show more firmness all around, as arrivals are only about even with the demand. Grapes are moving well, but except for seedless, offerings are too large to permit any advance.

Cranberries, bbl	@ 7.50
Huckleberries, lb	8@ 10c
Strawberries, chest	2.50@ 4.00
Raspberries, chest	4.00@ 6.00
Apples, Newtown Pippin	50@ 90c
Belleflowers	40@ 65c
Spitzenberg	50@ 90c
Gravenstein	50@ 1.00
Crabapples	25@ 50c
Quinces, box	75@ 1.00
Pears, box, large	1.25@ 2.00
do No. 2	50@ 75c
Winter Nellis	1.00@ 1.25
Peaches, lugs	30@ 65c
do, small bx, wrap'd	40@ 60c
Figs: Black, double layer	40@ 60c
White, single, layer	25@ 40c
Pomegranates, box	25@ 50c
Persimmons, box	50c@ 1.25
Cantaloupes, crate	1.25@ 1.50
Watermelons, doz	75@ 2.00
Grapes: Malagas, crate	35@ 50c
Tokays, crate	40@ 60c
Seedless, crate	75@ 1.00
Muscat, crate	50@ 60c
Black	25@ 40c

DRIED FRUITS.

The dried fruit market in general is quiet, with very little change in values. There is of course some business all the time, but individual transactions as a rule are small, the general disposition being to buy cautiously. Except for prunes and figs, growers are said to have quite a lot of stock still on hand, and seem likely to hold it for some time. Peaches get practically no attention, and are hard to move at any price, 3 1-2c. being about the best that is offered. Apricots also are rather hard to move, but there seems to be no pressure to sell, and prunes, though quiet, are firmly held. Raisins are going out steadily, though many eastern buyers seem to be operating with extreme caution. The New York Journal of Commerce says:

Local buyers appear to be paying no attention to offerings of California dried fruits for shipping from the Coast. Jobbers report that trade with them is unusually light for the season. This in connection with reports that considerable quantities of the different varieties are being consigned by packers to Eastern markets would seem to account for the lack of interest shown in forward shipment offerings from the Coast. There are no fresh developments in the market for new crop California Prunes aside from reports from some packing quarters of a firmer feeling in 40s. That does not seem to be general, for while it is stated that a number of leading packers are holding 40s alone on a 5¼ a 5⅜c f. o. b. four-size bulk basis, others are still ready to book orders for that size by itself or in combination with other sizes on a 5c f. o. b. bulk base. It is said, however, that sellers of such assortments offer but a limited quantity. It does not appear that very much business has been done on the recent offerings of French prunes, in this market at least.

California Peaches, either for spot or forward delivery, are neglected, and the market has an easy tone. Offerings are made for present shipment from the Coast on the f. o. b. basis of 4c for choice Muirs or yellows in 50-pound boxes. Apricots are dull and nominal.

Evap, Apples, 1914	4 @5 c
Apricots, 1914	6 @9 c
Figs: White, 1914	4 c
Black	2½@2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, 1914	5 @6 c
Peaches, new	3 @3½c
Pears	6 @8 c
Raisins (in sweatbox):	
Loose Muscatels	4 @4½c
Thompson Seedless	5 @6 c
Seedless Sultanas	5 c

CITRUS FRUITS

The eastern auctions are firm on citrus fruit prices. At New York, Monday, Oct. 5th, twenty-seven cars of Valencias were sold at auction at prices that averaged from $1.80 to $3.65 per box. On the same day the Boston auction showed prices averaging from $2.35 to $3.30 per box. Lemons sold for $3.60 and $4.35. At Chicago lemons brought $4 and $5, oranges $2.75 to $4.

Acording to estimates made of the 1914-15 California citrus crop the chances at this time are that the tonnage will be less than for the 1913-14 crop. However, this estimate may vary considerably owing to the season.

Up to Oct. 4th, the total orange shipments for the season from Southern California were 37,441 cars, as against 13,371 cars to same date last year.

The first lot of new crop Oroville oranges has been shipped for Australia, but shipments to the San Francisco market are not expected for some time. Valencias are doing a little better as to price, but the demand is still confined to narrow limits. The top prices of lemons shows another decline.

Oranges:	
Valencias, box	$1.25@ 2.25
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box	1.25@ 2.50
Lemons, box	2.00@ 4.50

NUTS.

Walnuts are now going out rapidly, the Association prices having been well received by the eastern trade. A good business has been done in Association almonds, but independent growers find it difficult to

sell on the basis of these prices.

(Association prices.)

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
No. 1 Hardshell	Nominal
Budded	20 c
No. 2	12 c

HONEY.

Values remain about as before. There has been a fair local business in comb honey, but offerings from various districts continue to increase, and the market shows no strength.

Comb: White	12 @14 c
Amber	8 @10 c
Dark	8c
Extracted: White	7 @8 c
Amber	4½ @ 6 c
Off grades	3 @ 4 c

BEESWAX.

There is some movement, but the local demand is limited, and considerable new stock is offered in the country.

Light	31 @32½c
Dark	27½ @31 c

HOPS.

Prices have been marked down sharply, but are really little more than nominal, as there is practically no business here at present. A good many growers are still holding for the former figures, but dealers are unwilling to buy, and the outlook is very uncertain.

1914 crop	13 @15 c

LIVE STOCK.

Values remain about as before on everything except hogs, which have been coming in freely for some time, and are considerably lower. Supplies of cattle and sheep are ample for current needs, and local business is rather quiet. Dressed beef, mutton and hogs are lower.

Steers: No. 1	6¾ @ 7 c
No. 2	6½ @ 6¾c
Cows and Heifers: No .1	5¾ @ 6¼c
No. 2	5¼ @ 5½c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½ @ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
250 to 350 lbs	8 c
125 to 250 lbs	8½c
Prime Wethers	5 @ 5½c
Ewes	4½ @ 5 c
Milk Lambs	6½ @ 6¾c

HORSES.

Heavy drafters, 1700 lbs. and over	$225@275
Light Dra's, 1500 to 1650	200@215
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	90@1.00
Delivery Horses, 1050 to 1250	75@100

MULES.

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

DRESSED MEATS.

Steers	10 @11¼c
Heifers	10 @11 c
Veal, large	13½ @14 c
Small	15 @15½c
Mutton: Wethers	10½ @11½c
Ewes	10 @10½c
Suckling Lambs	13 @13½c
Dressed Hogs	13 @14 c

WOOL.

Values remain altogether nominal, as dealers are unwilling to buy under present conditions, and most of the fall clip is still held in the country.

Fall Clip	Nominal

SPECIAL DECIDUOUS MARKET REPORT.

By J. L. Nagle.

There has been a noticeable advancement and an increase in demand, especially on Malaga grapes, also a slight change in favor of Tokays, during the past week, due in a great measure to cooler weather in the east and the fact that the falling off of shipments ten days ago is now being felt. Unfortunately, as soon as this rise in the market became noticeable, shippers increased their shipments and it will unquestionably have a depressing effect upon the market as soon as this increased tonnage arrives in the east. The movement of grapes from Ohio is now at its height and about 75 per cent of the crop from Michigan has been marketed.

Weather remaining favorable, California has yet to ship about 1000 cars of Tokays and about 500 cars of Malagas.

The packing of Emperor grapes in sawdust has commenced and it is estimated that at least 200 cars of kegs will be marketed. Eastern buyers have already accepted a price of from $2.25 to $2.35 a keg f. o. b. Fresno, which will return to the growers a handsome profit.

The markets during the past week ranged as follows:

New York: B. Hardy $2.00 to $2.23; Levis 70c. to 95c; Clairgeau $1.95 to $2.25; Salways 60c. to 70c; Picquettes 88c.; Cornichone $1.00 to $1.30; Malagas 85c. to $1.00; Muscats 80c. to 97c.; Tokays 75c. to 90c.

Chicago: Elbertas 80c.; Levis 40c. to 60c.; Salways 55c.; Cornichons $1.05; Malagas 80c. to 95c.; Tokays 75c. to $1.05.

Boston: B. Hardy $2.25 to $2.55; Clairgeau $1.80 to $2.30; Salways 55c. to 65c.; Cornichons $1.00 to $1.35; Malagas 85c. to $1.15; Tokays 75c. to $1.40.

Total deciduous fruit shipments for the season to Oct. 6th, were 12,613 cars, as against 10,774 cars to same date last year.

Publisher's Department.

This is the season of the year when the nurserymen begin advertising for winter and spring planting. Among the announcements in our columns this week will be found the one of Howard and Smith of Los Angeles. For years this firm has been in the front rank of California floriculturists, and their new idea of publishing a monthly bulletin will undoubtedly meet with instant response. Send for a copy at once, it will be well worth the effort.

Within a few days we will send a personal letter to a large number of our subscribers. May we ask for a careful perusal and united action from you?

CALIFORNIA POULTRY.

A new practical book for the poultry men and women of the Pacific Coast written by Mrs. Susan Swaysgood, who for the past twenty-five years has made money raising poultry on a farm in California. This lady has been widely known for the past five years through her writings for the poultry columns of various papers in the West. For several years she has been in charge of the poultry columns of the Pacific Rural Press.

In this book, Mrs. Swaysgood has given the latest and best in poultry practice. Her writings are very practical and are intended to especially help the men and women on the farms to raise more poultry and eggs at a profit.

"California Poultry" has been carefully written by the author and revised by Prof. E. J. Wickson and Geo. H. Croley. The book will contain nearly 200 pages of text and numerous illustrations, will be bound in cloth and sold at the net price of $1 per copy.

In publishing this book the Pacific Rural Press feels that it will be doing a real service to the poultry interests of the State and we will be glad to have you send for a copy, which we expect to have ready by Nov. 1st.

California Fruits and How to Grow Them, by Edward J. Wickson, A.M., professor of horticulture in the College of Agriculture of the University of California, horticulturist of the Agricultural Experiment station and editor of the Pacific Rural Press. Seventh edition; fully revised. Cloth; large 8vo; pages 513; illustrated; $3.00. San Francisco: Pacific Rural Press.

"This valuable contribution to horticultural literature will answer instantly most of the queries which can be put regarding the subject indicated by its title. Prof. Wickson is well qualified by study and experience to write on California fruits. Since the appearance of the first edition in 1889 the work has reached a distribution of 19,000 copies. Its circulation is a testimonial of its suitability for service in building up fruit industries. It is of widespread interest in that it shows methods by which such a great product as $100,000,000 worth in a year is produced. The work is in ten parts, in the first of which climate and soils are discussed. Cultural methods are described in the second part; orchard fruits in the third and semi-tropical fruits in the fifth. The grape industry, small fruits and nuts are treated of in detail. Fruit preservation, fruit protection and utilization of fruit wastes are the subjects of concluding chapters. Nursery operations in California are described and full information on the citrus as on all fruit matters in the state is given. An interesting feature, because the subject has not been so generally discussed is the chapter on nut growing in California. There is much valuable information on methods and varieties that will be referred to repeatedly by all who have interest in the subject. Prof. Wickson has provided in excellent manner what is needed—a compendium of the fruit interests of a state in which can be grown successfully most of the known fruits of the world except the strictly tropical."—American Fruits.

STATEMENT.

of the ownership, management, circulation, etc., required by the Act of August 24, 1912, of Pacific Rural Press, published weekly at San Francisco, Cal., for October 1, 1914:

Name of Editor, E. J. Wickson, Berkeley, Cal.

Publisher, Frank Honeywell, San Francisco.

Owners: (If a corporation, give its name and the names and addresses of stockholders hoding 1 per cent or more of total amount of stock. If not a corporation, give names and addresses of individual owners.) Frank Honeywell, owner, San Francisco.

Known bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities: (If there are none, so state.) None.

FRANK HONEYWELL,
Publisher.

Sworn to and subscribed before me this 1st day of October, 1914.

C. B. SESSIONS,
Notary Pubic in and for the City and County of San Francisco, State of California.

(My commission expires May 26, 1917.)

There has developed in the minds of a great many of our farmers the impression that horses of all kinds would be in great demand, for it is a well known fact that war and its ravages require horses in large numbers. The inference is, therefore, that with the present magnitude of the European trouble, this country will be called upon to supply army horses.

"O, my friends, there are some spectacles that one never forgets!" said a lecturer, after giving a graphic description of a terrible accident he had witnessed. "I'd like to know where they sells 'em," remarked an old lady in the audience, who is always mislaying her glasses.—Tit Bits.

A certain politician desired a diplomatic appointment. A friend, in surprise, said to him, "But you don't even speak the language of the country!" "Well, replied the determined applicant, "a man isn't nearly so likely to make indiscreet remarks if he has to get a lexicon and look up the meaning of every word he utters."—Washington Star.

A strip of ribbon two inches wide and three miles in length will be used by the department of live stock of the Panama-Pacific International Exposition in the badges to be given the winners in the various classes. These are in addition to the $450,000 already set aside for livestock prizes and not including $227,000 to be given in purses at the two racing meets for harness horses.

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Screw Casing Fittings and Valves Guaranteed for Pressure
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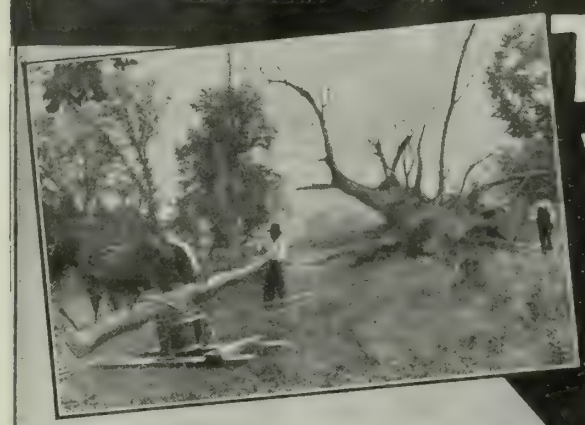

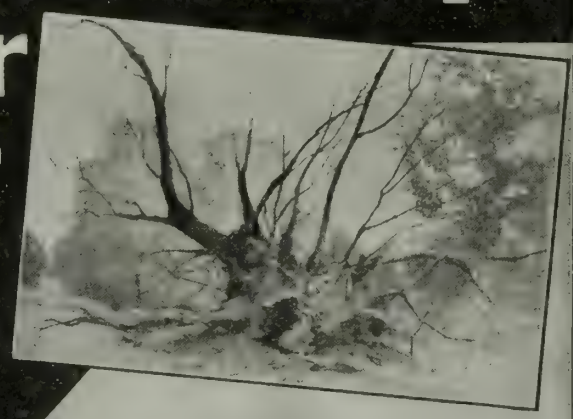

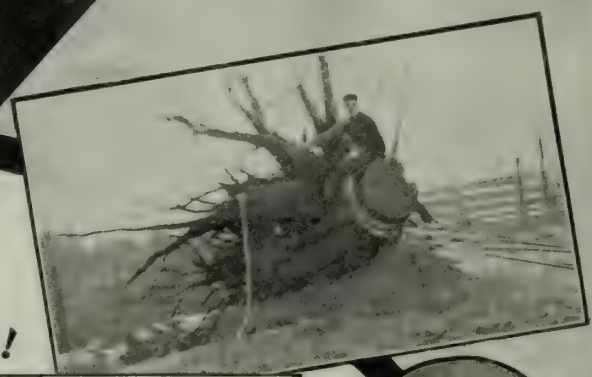

Mail the Coupon!

Make this your banner profit year! Farm *all* your land. Pull out the stumps—plant on virgin soil and reap the reward of *increased land value and big crops that you won't get if you let the stumps stand!*

Get my new free book at once, explaining all the facts and figures about the Hercules All-Steel Triple Power Stump Puller—the machine that so many thousands of farmers are making big money with throughout the country.

Let me tell you how you can easily make $100.00 profit for every $1.00 invested in the Hercules machine, not only the first year, but for years and years to come.

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With a Hercules, you turn your loafer stump land into *money* land and harvest *money crops*. The work is easy, quick, safe and *sure*. The Hercules pulls out the *roots and all*—no grubbing or plowing into snags.

Pulls An Acre of Stumps A Day

Let me send you my free book that shows what *other* progressive farmers have done and are doing. Read where they pull the biggest stumps in five minutes, clearing an acre of stumps a day. See the actual photographic illustrations of scenes from many states. Read about Hercules.

Construction

The Hercules is the *one* all-steel triple power stump puller made. It will pull any stump, green tree or hedge without straining or breaking. It is 60% lighter, and 400% stronger than any "semi-steel" or cast iron puller made. Don't be fooled on names that sound like *genuine* steel. Get a Hercules and be *sure*. It's the only puller with double safety ratchets—has self-anchoring and stump-anchoring features and is built low to the ground.

My 3-Year Guarantee

If any casting of your Hercules All-Steel Triple Power Stump Puller breaks, any time within three years, Whether the Fault Is Yours or the Machine's, I will absolutely replace any such part free of all cost to you. There are no conditions to this guarantee whatever. Any casting will be replaced promptly, whether the machine breaks by accident or through any flaw in workmanship or material.

My New Low Prices Beat All

To the first buyer in each locality I am making a special price offer this year that is bound to gain the attention and get hundreds and hundreds of orders from farmers everywhere. I want you to get in on this bargain at once. The limited number of these machines won't last long at the price I am making. If you write me at once on the coupon below or on a postal I will reserve one of these machines until I hear from you whether or not you are going to buy. Understand, your request for my book is not an order. I simply want to get the book to you at once, so that you can read the remarkable facts about the Hercules All-Steel Triple Power Stump Puller and how it does such splendid work, making big profits for owners everywhere.

Mail Coupon

or a postal right now before you forget, or take down the name and address and write as soon as you get a minute's time. Address me personally.

Mr. B. A. FULLER, President, Hercules Manufacturing Co.
812 23rd St., Centerville, Iowa

Dear Sir: Please send me free book about the Hercules Triple Power All-Steel Stump Puller. Also your low price to first purchasers.

Name.....

Town.....

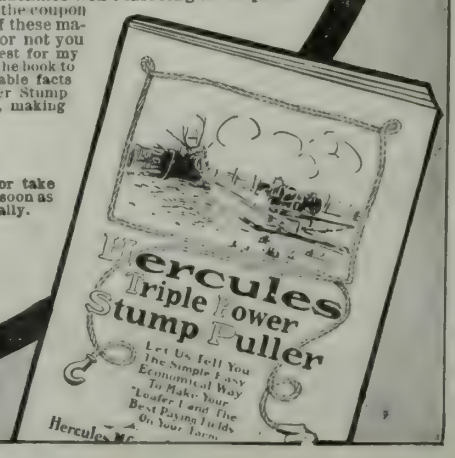
State.....

Route No.....

B. A. FULLER, President

HERCULES MFG. CO.

812 23rd St., Centerville, Iowa



THE
PACIFIC RURAL PRESS

Vol. LXXXVIII—No. 16 San Francisco, Saturday, October 17, 1914 Forty-fou[illegible] [illegible]ar

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The Draft Colt and Its Sire

[Written for PACIFIC RURAL PRESS.]

The advantage of breeding mares to sound, heavy stallions is a subject which has been pretty thoroughly discussed in these columns during the past year, and was in fact the chief reason for the organization of the California Draft Horse Breeders Association.

It is doubtful whether there has ever been a better example of the benefits to be derived from the use of such stallions than was shown at this year's State Fair, by McCormick Bros., of Rio Vista, Solano county. They showed, by their exhibit of the Shire stallion Severn Pilot 2nd and three of his get, that the chief requisite for good colts lies with the stallion.

This stallion is now seven years old, having been imported by Henry Wheatley, and shown at the State Fair in 1910, where he was a prize winner in the open classes. He was later sold to McCormick Bros. for use on their 40 grade mares in the Montezuma hills near Rio Vista, where a large part of their farm land is located.

These mares were grade Clydesdales, the practice on this ranch for a good many years having been to keep a good registered stallion. While no one breed has been kept continuously, good individuals were always selected with the result that the mares carry a little blood from various breeds but are all good heavy brood mares.

The illustration accompanying this article shows this stallion and three of his get as they appeared at the State Fair, two of the get being two-year old fillies out of grade mares and the other one being a two-year old stallion out of a registered mare.

These colts are being raised in the same manner as all of the colts on this ranch are handled, viz., pastured on hill land in the spring, and later run on grain and hay stubble land, the owners being extensive grain growers. During the worst weather of the winter months they are sometimes taken up to the barns and fed for awhile on hay; but in the main they are run on pasture that would be of little value for other purposes.

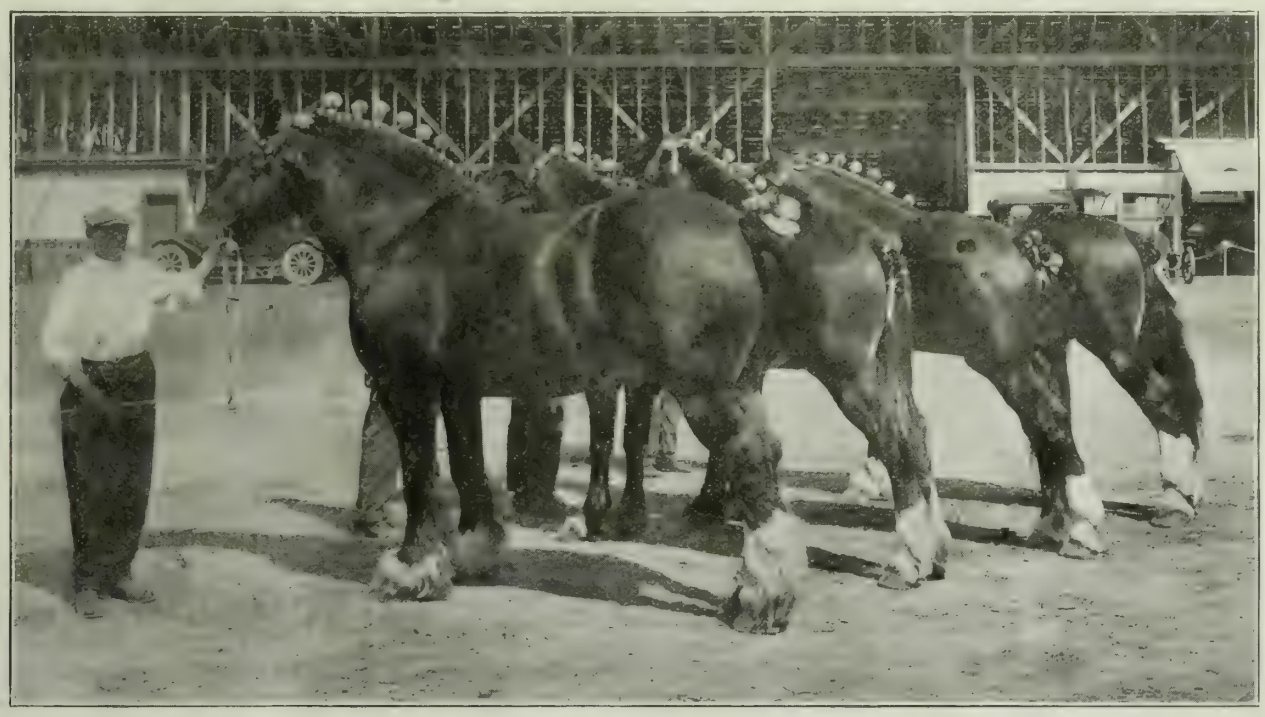
The colts shown here were taken from the grain stubble, four weeks before the Fair, and given grain and hay, but Mr. McCormick states that while they were the choice of his colts, there are many others from the same stallion that were nearly as good individuals and that the colts sired by this stallion are the most uniform lot of horses that he has ever raised.

In regard to selling such stock, Mr. McCormick assured us that he finds a ready sale for all his animals as soon as they are at a marketable age and that the average price being paid him for colts out of this stallion is $300 straight [illegible] for mares and geldings. The two fillies exhibited were considered worth $350 each, but even at the average price a great difference will be noted over what is ordinarily paid for the small inferior animal that most farmers raise.

While a great deal of the credit for the quality of these colts is naturally due to their mothers, the thing after all comes back to the one factor, good sound stallions. For without the aid of such stallions in the past, the mares would not have been as good individuals and again, all of the past work would have been upset through the use of an inferior stallion on these mares.

In commenting on this entry, Judge Cain stated that the sire was one of the most wonderful breeding animals that he had ever seen and advised California farmers to purchase more of his kind, emphasizing the fact that without sound sires no advancement could be made in heavy horse breeding.

While this horse has proved highly profitable to his owners, one cannot help speculating as to what his value would have been to mare owners and to horse breeding as an industry had it been possible to breed him to good registered mares instead of to grade mares. When we think of this aspect of the situation is it any wonder that men who have the interests of the horse at heart should be continually urging the farmer to secure a few registered mares and start breeding horses along more progressive lines as we do with all other kinds of livestock?



Prize Winners at the State Fair.

With European breeding establishments badly depleted, which will necessitate big reductions in importations for a great many years, the opportunity furnished home breeders has never been better than at the present time to enter the purebred horse breeding business. Not only are we largely cut off from importations, but every little while we hear of a big contract for exportation of good horses that pure-bred stallions get with grade mares. So the home market for pure-bred animals to breed from, and the home and foreign market for their get, will for some years at least show stronger demand than ever.

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS, SAN FRANCISCO

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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Frank Honeywell - **Publisher and Manager**
W. H. Schrader - - **Advertising Manager**
D. L. Schrader - - **Subscription Manager**
R. E. Hodges } - - - - **Assistant Editors**
J. C. Loomis }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., October 14, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Red Bluff	.82	2.56	2.38	68o	44o
Eureka	.52	.52	1.36	88	50
Sacramento	.52	.08	.72	82	48
San Francisco	.08	.03	.67	84	54
San Jose	.01	.00	.68	86	44
Fresno	.00	.20	.57	88	48
Independence	.00	.20	.56	80	38
San Luis Obispo	.00	T	.76	98	52
Los Angeles	.00	.19	.24	96	56
San Diego	.00	.68	.24	84	56

T means trace

The Week.

It is hard not to keep thinking of money, as things now are in the world. Money has suffered severely through the ill-repute which its wicked partner, avarice or the love of money, has engendered, but for all that good, sound, real money is the greatest thing in the material world. Money is more than gold and silver, for it is the humanization of those metals. The relative rarity of them, as compared with other materials of the earth's crust; the durability of them, because their very constitution places them beyond corruption by moth or rust; the intrinsic beauty of them which has, from prehistoric times, impelled a man to conflict of motives, whether he should display them on his person or bury them in the earth for safety —all these and other qualities, added to the cost of the effort to set them free by bursting the fetters which creation forged, underlie mankind's acceptance of gold and silver as the money of the world. But really all this is but the lesser side of the real significance and the real value of money, and this is not at all the side which shines in the eyes of the world at the moment. It is rather the importance of money as the measure of human effort, self-denial and thrift, in which money betokens the possession of what the world honestly admires as high human quality, by the same penetrating and concrete judgment which exalts work as a sign of faith, of which mankind must keep thinking in these baffling and beleaguered times. For the world is burning up money as it has never done before since creation's dawn, and though like the primordial chemistry it makes neither more nor less metals by the process, it burns them free from their association with wide-spread human happiness and prosperity, and runs them in molten streams into the rocks of human adversity whence at least a generation of mankind must bore and blast in want and misery to recover them. Sixty millions of dollars' worth of actual metals are thus burning free and running down into the hell of inhumanity every day this beastly and unpardonable war is going on in Europe. And with these millions of precious metals-weight goes all the human luster and significance which enriched them as money, when held as such by those whose toil and thrift they rewarded. It is no wonder then that men even athwart the world feel the heat of this conflagration: it is no wonder that they hold the gold they happen to have as though it, too, might burn and melt and run to perdition.

The American Attitude Toward Money.

But though as human beings it is impossible for us to forget the relations of money to human interests on that darkened side of the world, where even the sun refuses to shine on sodden trenches which are uncovered graves—it is not our duty to reflect such misery in our own lives, but rather to lighten distant gloom by our own activity. It is our duty to make our money shine more brightly from its human side; to show the world that it is not mere metal for the burning but a power for upbuilding—a force to be employed: a talent to be kept at its most effective industrial speed and not to be buried in the earth. It was not a good thing that the Secretary of the Treasury of the United States was able to say a few days ago that a fraction of our national banks have been hoarding money since the war began and demanding excessive rates of interest, and to conclude: "If the large amount of loanable funds that are kept from actual employment were invested in commercial and agricultural paper, or loaned on proper security, the present situation would be greatly relieved." Naturally the banks declared the charge exaggerated and claimed to be slandered by the figures, showing that some of them were hoarding money in two or three times the amount the law required. That incident has closed, however, but the effect of it was good in reminding bankers that their policies are subject to public view and that they have no right to put on the professional face of an undertaker and try to get just as much profit from higher interest on smaller loans, because there is a sad time somewhere in the world. The banker is the honorable keeper of the tools with which the community works and he may some day come to understand that it is a better way to keep people busy and confident to give them more tools than to take tools away from them.

California Will Bank for the Slope.

However that may all be as banking philosophy, and we do not over-strongly endorse it, we are hopeful that we shall largely escape the hoarding either by bankers or by misers, which the distressed state of the world is apt to induce unless we exhort each other against it. Because, as a state we are coming into very responsible relations with the rest of the coast under the new national banking laws. If California loses in money-doings the old reputation of the state for largeness of view and readiness in hospitality, our advantages will bless nobody. It has been announced that the appointments are complete for the organization of District No. 12, comprising the states of Washington, Oregon, Idaho, Utah, Nevada, Arizona and California, of which San Francisco is the banking capital. This means that the operation of the National Reserve Bank for the whole country west of the Rocky Mountains will proceed from California, with the directorate representative of course of all that vast geography. It is believed here that organization will not be completed in less than a month. It is possible the system may be in operation in November, though it is probable that actual work will not be begun until near the beginning of the new year.

The relation of this re-arrangement of national banking to agricultural promotion and development is not yet wholly discernible, and for that reason we take the more interest in it. It is not so much for its operation under present laws as for its relation to laws still to be enacted that we count the location of the District Reserve Bank in California significant, for this Reserve Bank will have to do with all the revisions in national finance as relating to agriculture, which Congress will ere long enact. It will therefore unify the agriculture of the whole slope under the leadership of California and it will thereby attain a breadth of view and cosmopolitan spirit which it could not otherwise possess. Besides that it will give nearness and warmth of spirit and availability of resources to State organizations for credit to agriculture, which are likely to receive the attention of our own legislature in the near future. These facts and these possibilities should induce our agricultural population to give study and thought to the gladness of money and how to deserve it; for this is the obverse of the sadness of it to which we have already alluded.

Farmers' Money for Their Own Advantage.

It is some time since we indulged in an exhortation to farmers to use their own money for their own advantage instead of passing it out for the use of promoters of gold-brick and other forms of infernal pavement. To use money to make money: to invest money to make the getting of more money easier in the simple things of increasing products and moving products—these are too simple to awaken the interest of many who thirst for something frenzied and seductive in a line of investment. And yet, if our farmers who sell products at the higher rates, which are to be expected for nearly everything which we produce, or who sell part of their land at a large increment, should use the money to the advantage of their production or of their unsold acreage, we would achieve a development which no set of professional promoters or distant capitalists could possibly achieve for the state. Take a concrete instance: last Saturday the people of Dixon and its vicinity welcomed the first cars of the Sacramento Valley Electric Railway with bands, glee club choruses, barbecue and other demonstrative features. An ox and twelve sheep were roasted for a big barbecue lunch. George W. Pierce, president of the railway, gave an address on the advantages of electric lines. In the evening there was a dance in the band pavilion. The celebration was at-

tended by many from neighboring towns. The Sacramento Valley Electric is referred to as the farmers' line, inasmuch as it is largely financed and officered by farmers. Of course, the chief significance of the event is set forth in the last sentence. The road will connect the Dixon region, which has made great progress in higher farming during the last decade, with the bay cities via the Oakland-Antioch line, and it has great achievements in view northward through the Sacramento valley. If it has been correctly engineered and economically built, it will be a development feature of the district traversed, which will be indirectly profitable at least, and may, for all we know, be much more than that. It is a good instance of a rural community helping itself forward.

General California Activity.

California life is full of action just at this time, in spite of distant disturbances and in spite of some large undertakings, which are lingering as a trance produced by over-doing. We cannot enumerate the many and varied achievements of individual and community effort which are now to be seen. The reader does not overlook, we hope, the pages, in each issue, entitled "Agricultural Review." It is aimed there to set forth events and comments, indicative of the constant progress of the state in things worth while: in part to help others to do the same things, in part to reflect the spirit of enterprise which works out its own schedules of progress.

One of the tokens of alertness now prevailing is resuming beet sugar production, because the state of the sugar world overcomes the handicap of tariff revision. The pioneer sugar factory at Alvarado, which was in process of disintegration, has resolved for rehabilitation for the coming year. Contracts for beet growing will be offered to farmers, seed enough for the year is on hand, and while the crop is growing some new machinery will be installed in the old building. The capacity of the Alvarado factory is about 800 tons of beets a day, and it enjoys the distinction of being the oldest beet sugar refinery in the United States which is still capable of production.

Cape Cod and San Francisco Bay.

But we would think not of ourselves alone. An exceedingly interesting announcement is made to the effect that Massachusetts will solicit immigration of farmers during the Panama Pacific Exposition. According to the Chronicle the effort proceeds upon the belief that in the stream of European emigrants to be diverted to California by the Panama canal there will be a much higher percentage of those seeking land than in the immigration to the Atlantic Coast. If these people can be met at the exposition and signed up for definite parcels of land, there would be no trouble in getting them to go eastward for settlement. Among the new arrivals will be large numbers so accustomed to a climate similar to that of Massachusetts they may even prefer the Eastern to the Western states if given special inducements. It is a very interesting undertaking and the outcome of it will do to watch for. It is quite true that the far east can undersell the far west in land values, for they do not have to charge in anything for climate. But who can be sure that there will be any immigrants from Europe until a new crop can be grown? But the undertaking is none the less startling—the old Bay State sollciting population at San Francisco Bay! Was it the battle of Tamalpais or of Bunker Hill which started the country aright?

Queries and Replies

Querists must give name and address.

A Tussle with Diabroticas.

To the Editor: I am sending you a few bugs about the size of a ladybug but of a green color, marked with black dots. They are eating the leaves of my plants and fruit trees. In looking through a pamphlet on destructive insects, I found the exact description of it; they call it the "Leaf-Eating Beetle" and they say the best way to dispose of it is by shaking them off in the morning, as they are quiet when the air is cool and heavy and cannot fly, but no sooner the sun comes out they are able to fly but not far from the tree. I am constantly at it, as I like to save my good trees, but, nevertheless, I wish to hear your opinion on it, as I shall consider it true if it comes from you. What would you advise me to do with the remaining yellow leaves? I fear they may contain some eggs that will hatch some more undesirable citizens.—M. D. E., Lincoln.

The insect is diabrotica soror. It is a very old pest, and at this time of the year you are perhaps taking it a little too seriously, for it can now do little harm except destroy the beauty of your chrysanthemums and other autumn flowers. It is too late to injure your fruit trees for the leaves have practically finished their work for the season. The chief harm this pest does to fruit trees consists in eating holes in the ripe fruit, though if it comes early enough in the season it may injure the blossom. Never mind the yellow leaves; they contain no eggs. These are laid in the ground and the larvae feed on grass-roots, etc.—the new beetles coming from the ground in the spring. Of course, the more old beetles you smash now the fewer new ones you will see next summer—so keep at it. These beetles, like other leaf-eaters, can be killed by poisoning what they eat by spraying with arsenate of lead, but one does not like to spray ripe fruits or flowers with such an active poison. That is where this pest has the advantage of you, so go on smashing them. When they are in good flying condition you may be able to drive them off your place by building good smoky fires on the windward side. The problem will then be up to your neighbors on the leeward side.

Oil-Painted Trees.

To the Editor: I put out a small family orchard last spring—almond, plums and peaches. The trunks of the trees got sunburned in places, so I bought some white lead and oil paint and had the trunk painted, but instead of painting only the sunburned places the whole trunks of the trees were painted. Will this harm the trees any? If so will it harm the trees to wash the paint off with turpentine? —P C. T., Escalon.

We shall have to answer you theoretically as we have never seen just that thing. Cut into the bark, where it was healthy when the paint was on and if the inner bark has turned brown, pull out the trees and replant this winter—whitewashing the bark to prevent sunburn. If the inner bark is still of natural appearance, scrub off the paint, not with turpentine, but with caustic soda—one pound to four gallons of water and follow with a good washing with plain water. There are perhaps two chances of injury: one by penetration of cell-killing substances in the paint which would be increased by using turpentine; the other would be by excluding the air which can be reduced by removing the paint with an alkali.

A Bad Streak.

To the Editor: I planted an apple orchard seven years ago this coming winter. There is a strip nearly 300 feet wide diagonally across one corner where the trees, although they did as well as the others the first three years, have done worse the past three years. Many of them have developed root knot, while others in next row will be fairly good. I cannot see any difference in the soil, there being no wash or draw through the land to make a difference. The subsoil is good down at least six feet. The trees were all the same and equally as good when planted. Would it be desirable to have the soil analyzed? Will walnut trees develop the root knot? I have started them by planting the seed to be budded without being moved. —C. H. R., Chino.

The soil should be analyzed to determine presence of alkali or poverty. If the soil is hospitable, more water and some fertilizer should be used. You can see how far root knot is a factor by digging enough to show whether the bad trees are all knotted and all the good trees free. All the walnuts—the English seedling and the various black walnuts—are subject to root-knot.

Lime and Litmus.

To the Editor: Will a top dressing of air-slaked lime, sprinkled and cultivated into a bed of bulbs, daffodils, paper whites, etc., do any harm to the young roots already started? They have been in but a short time, but I find on testing land with blue litmus paper traces of sourness.—T. R. T., Santa Cruz.

A good whitening of the surface with air-slaked lime is not dangerous if soon followed by rain or sprinkling. It might not be advisable with some small seeds, but larger seeds do not object and growing plants or bulbs are not injuriously affected. The litmus test is good if one has had experience enough not to attach too much importance to slight colorations. If various plants are growing well, the soil is not injuriously acid. The lime, however, if not used in excess, will do no harm and may do good in several ways.

Do Not Graft Apples on Pears.

To the Editor: The article on apples in one of your recent issues has set me thinking regarding the advisability of grafting over some Bartlett pear trees on my orchard near Winters, Yolo county. I have twenty acres in pears which are about 25 years old, the main stalk of the trees being hardy and in perfect condition, but the branches and limbs are a sight due to the continued cutting out of the pear blight. If it is advisable to make this change, please advise me as to the varieties of apples to graft.—A. K., San Francisco.

Apples have no durable affinity for pears and vice versa. Sometimes considerable growth is secured, but sooner or later the scions die. This is the decision reached after many trials in all parts of the world. Besides the pear blight attacks apples—sometimes more virulently than it does pears.

Honest California Fruit Packs.

[Written for the PACIFIC RURAL PRESS.]

Dishonest packs are to be discouraged by penalizing the packers. Uniform packs of deciduous fruits are to be established by State law.

A most commendable effort to standarize the pack of deciduous fruits for shipment from the State took concrete form October 7 when about 20 representative fruit shippers and growers met at the call of the State Horticultural Commissioner in the capitol to discuss a proposed law drawn up by a committee composed of H. E. Butler of Penryn (chairman), F. B. McKevitt, and Sen. B. B. Bills both of Sacramento.

Col. Harris Weinstock presided at the discussion which was very earnest about certain points, but with no show of ill feeling. The committee report was adopted unanimously, early in the afternoon with but few changes and will be presented by Col. Weinstock at the Fruit Growers' Convention to be held at Los Angeles.

Apples were not included since representatives of apple districts found themselves at the last moment unable to come. They are likely however, to be cared for in the national standardization now pending in Congress.

Dr. Cook held the harmony and unanimity of the meeting to be a good omen for the early success of a measure of tremendous importance.

We give the proposed law in full below so that there may be wide discussion of it before the convention. The best letters to the Pacific Rural Press of 100 words bringing out new points concerning this law will be published.

"An Act to establish a standard for the State of California for packing of Fresh Fruits for sale or for Transportation for sale, for interstate and foreign shipment, and to prevent deception in the packing of fresh fruits for such purposes.

"Be it enacted by the People of the State of California:

"Sec. 1. There is hereby created and established a standard for the packing of fresh fruits for the State of California.

"Sec. 2. That any box, basket, package, or container of fresh fruit of the kinds specified in this act, which shall be packed and offered for sale or for transportation for sale, shall be packed in accordance with the specifications herein made.

"Sec. 3. All fresh fruit of the kinds specified in this act which shall be sold in bulk without packing, shall be exempt from the provisions of this act.

"**Sec. 4. Cherries.** Each box or package shall contain fruit of uniform quality and maturity and one variety only, excepting that if package contains more than one variety, such fact shall be plainly stamped on the outside of the package with the words, "Mixed Varieties." (Letters one half inch high.) Each box, package or container shall be stamped on the outside with the minimum weight of contents.

"**Sec. 5. Peaches.** The peaches in each box or package shall be of uniform size, quality, and maturity, and comply with the standard specified in Sec. 2; when packed in a box or container having perpendicular sides and ends, shall contain approximately the same numerical count in each layer; also the box or container when packed and offered for sale or for transportation for sale, shall bear on the outside of the end in plain figures the approximate number of peaches in the box which shall be within four peaches of the true count and shall also bear in plain figures on the outside of the end the minimum weight of contents. Except when packed in crates or boxes made up of two or more sub-containers having sloping sides for the purpose of ventilation of fruit therein, the fruit shall not vary in size more than twenty per cent and no layer below the top layer shall contain a greater numerical count than the top layer. Each box, crate, other package or container shall be stamped on the outside with the minimum weight of contents. Each box, crate or package shall bear in plain letters the name of variety contained in the package.

"**Sec. 6. Pears.** The pears in each box or package shall be of uniform size, quality, and maturity. Each box or container shall bear in plain figures on the outside the minimum weight of contents. Excepting when packed in crates or packages made up of two or more sub-containers having sloping sides for the purpose of ventilation of fruit therein, the fruit shall not vary in size more than twenty per cent and no layer below the top layer shall contain a greater numerical count than the top layer. Each box, crate, other package or container shall be stamped on the outside with the minimum weight of contents. Each box, crate, or package shall bear in plain letters the name of the variety contained in the package.

"**Sec. 7. Plums and Prunes.** The plums and prunes in each box, crate, or package shall be of uniform quality and maturity; and when packed in box or container having perpendicular sides and ends shall contain approximately the same numerical count in each layer. When packed in crates or packages made up of two or more sub-containers having sloping sides for the purpose of ventilation of fruit therein, the fruit shall not vary in size more than twenty per cent and no layer below the top layer shall contain a greater numerical count than the top layer. Each box, crate, other package, or container shall be stamped on the outside with the minimum weight of contents. Each box, crate or package shall bear in plain letters the name of the variety contained in the package.

"**Sec. 8. Apricots.** Apricots in each box, crate, or package shall be of uniform quality and maturity; and when packed in box or container having perpendicular sides and ends, shall contain approximately the same numerical count in each layer. When packed in crates or packages made up of two or more sub-containers having sloping sides for the purpose of ventilation of fruit therein, the fruit shall not vary in size more than twenty per cent; and no layer below

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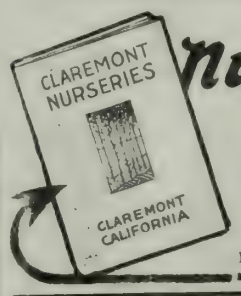

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the top layer shall contain a greater numerical count than the top layer. Each box, crate, other package, or container shall be stamped on the outside with the minimum weight of contents. Each box, crate or package shall bear in plain letters the name of the variety contained in the package.

"**Sec. 9. Grapes.** Grapes shall be of uniform quality and maturity and shall be well matured and show a sugar content of not less than seventeen per cent. Each crate or other package and containers therein shall bear in plain figures the minimum weight of contents. Each crate or package shall be stamped in plain letters with name of variety.

"**Sec. 10. Berries.** Berries shall be packed in uniform packages of dry quart containing interior capacity of 67.2 cubic inches or dry pint containing interior capacity of 33.6 cubic inches and shall be of reasonably uniform size, quality, and maturity throughout the package or container.

"Sec. 11. That all boxes, crates, or packages when packed and offered for sale or for transportation for sale, shall bear upon them in plain sight and plain letters on the outside the name of the person, firm, company, corporation, organization or the recognized name of the orchard and Postoffice address, who shall have first packed or authorized the packing of same; also the name of the locality where the fruit is grown.

"Sec. 12. Any person, firm, company, corporation or organization who shall knowingly pack or cause to be packed, fruit of the kinds specified herein, in boxes, crates, packages or containers to be offered for sale or for transportation for sale in willful violation of the provisions of this act, shall be guilty of a misdemeanor and subject to a fine of not less than $10.00 or more than $50."

SEEDING BUR CLOVER.

[Written for PACIFIC RURAL PRESS.]

Flood-irrigating his prunes four to six inches deep early in October just as a preparation for a bur clover crop, is the system used by C. A. Braun of Santa Clara county. His soil is gravelly silt, his trees big and healthy looking. As soon as the soil was dry enough he stirred it up with a spring-tooth harrow so it wouldn't bake, and immediately sowed the bare clover seed. He says it will sprout that way without further attention—he had a heavy lot of it last year. But otherwise, it is hard to get bur clover to germinate. It has to be replanted every year here where absolutely clean level cultivation is practiced to make a bed for the prunes to fall on.

It is different on the hilly plum and peach orchard of Ed Ames in Placer county where such fine cultivation is unnecessary. He always has a fine volunteer crop of bur clover because in plowing it under, he aims to leave little tufts of the old plants sticking out from the dirt. He never plows in spring until some seed have matured, and the tufts left sticking out, mature more before he disks or cultivates the orchard. Then the soil is harrowed all summer, never while it is wet from rain or irrigation, and the humus with the cultivation makes it always possible to kick out damp ground.

Mr. Braun experimented last year with various cover crops and bacteria cultures on small plots and has concluded that for his purposes bur clover is best.

Robert Haenggi of Los Angeles county, who grows much popcorn, waxes enthusiastic about bur clover, saying that "California land was made by bur clover which has made our poor looking soil (to the man from the Middle States) the most productive in the U. S." He tried sweet clover, but discarded it because of fall plowing. "Sweet clover dried out the soil too much," as he says.

W. I. Newcomb of Sebastopol grows bur clover among his apples, and applies some manure and chemical fertilizers besides. But he believes more in the former than in the latter. This is because neither of the two main mineral food elements is yet exhausted on his soil. Such exhaustion is postponed anyway by liberal applications of green cover crop and manure because those fertilizers work on the others to make the natural supply of them in the soil more rapidly available.

IRRIGATION VS. CULTIVATION.

Writing to the Pacific Rural Press of the Fair Oaks fruit section of Sacramento county, G. E. Fetters, a leading farmer, makes the following point:

"I think our chief trouble is in irrigation. The growers nearly all think all water and little or no cultivation is the cheapest way. But with Prof. Chase's constant urging for less water and more cultivation, some are raising better fruit and more of it. The increase in returns far surpasses the increased cost of labor in cultivation, and the trees are healthier and better in every way."

Hard Pan.—Prof. Chase, the local inspector for the horticultural commissioner, told the writer last spring that on account of the peculiar soil conditions in that section, many people who came from other sections were putting in fruit that would be a dead loss to them in a few years. He longed for a farm adviser to tell the people how to master the conditions. We learned later that while the soil and drainage are first-class, it is underlaid by a layer of hard pan sometimes as much as two or three feet thick. Under this is good soil again and the simple solution to the problem is to dynamite a hole through this for each tree. Unless the hard pan is thus penetrated, the trees cannot be vigorous as was shown strikingly on the ranch of C. E. Weichert, where citrus trees full of dead wood took on new life after two holes beside each were dynamited a year ago this summer.

FULL MEASURES FOR BERRIES.

Numerous efforts to market California berries outside the state this season in packages containing less than a full pint or quart resulted in the turning down of the fruit. Other states are becoming more and more stringent regarding short weights and measures.

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Individual Tree Fertilization.

[Written for the PACIFIC RURAL PRESS by J. E. Adamson, Pomona.]

All plants take from the soil a quantity of food which is represented by the amount contained in the crop removed from the place and that which in the case of trees is required to build up the structure of the tree as it grows and increases in size and to build the leaves which are cast off from time to time according to the nature of the tree.

The principal elements of plant food with which we have to deal are nitrogen, phosphorus, potash, and lime, because these are the ones taken from the soil in largest quantity, and the removal of one or the other not only makes a shortage of the supply of that element but is liable to make trouble by the unbalancing of the elements so that the trees are not able to make the best use of those that are left.

The most common of these minerals found native to our soils is potash, of which some soils have large supplies; in a form, however, that makes it absolutely useless to the class of plants from which the fruit grower expects to make a return on his money invested.

Nitrogen is mined in Chili and some other places in the form of nitrate of soda or sodium nitrate. It is also taken from the air by the action of various plants upon which cattle are fed, the blood and parts of the flesh and bones coming to us in the form of tankage or dried blood. Or the plants themselves may be worked into the soil and deliver their toll directly. Nitrogen is also taken from the air, its principal source, by means of electricity, and combined with lime, after which it is called nitrate of lime.

Phosphorus comes largely from bones of animals and from the immense beds of lime phosphate found in various parts of the world. Potash as we get it comes to us in the form of sulfate of potash, principally from Germany where it is mined.

Fertilizer Laws.—We buy these elements of plant food under the general name of commercial fertilizer, sometimes in a ready mixed state, sometimes in the form of simple elements which we put into the soil in any proportion to suit the needs of the soil. The law governing the sales of fertilizer requires that the vendor shall attach a statement of the contents to each package, and this is usually found in the form of a tag on which is printed the formula under which the mixture is made or the amount of each element contained in the package if the contents are in the unmixed state. These amounts are given in percentages, the formula usually reading as a series of numbers, for instance the formula 4-8-3, means that of the total weight 4 per cent is nitrogen, 8 per cent phosphoric acid, and 3 per cent potash.

Buying by Units.—These percentages are generally spoken of as units and prices are often computed under that name. The use of the term "unit" is a simplification of the problem of calculation of what we are buying as it brings us to the easy basis of thinking in terms of units instead of percentages. There being one pound in each hundred for 1 per cent it follows that there are 20 pounds in each ton for each per cent. Taking the formula given above, we would have in each ton of the goods purchased, 80 pounds nitrogen, 160 phosphoric acid, and 60 of potash. These elements have a certain definite value in the open market so there is opened up a simple way of ascertaining the value of what we buy. And surely the buyer of high priced goods like commercial fertilizer should see that he is not paying for more than he gets.

There was a time when there was no ready means of knowing whether we were buying what we thought we were, but that time has passed. We now have a fertilizer control law which provides that samples be taken by an authorized inspector and forwarded to the State Chemist's where it is analyzed and prompt correction of untruthful formulas enforced.

Almost all the samples are taken at random from lots still in the hands of the dealers, the growers buying on that sample, when as a matter of fact there is no way of knowing whether the sample came from the lot out of which the delivery was made or from some other lot. The safest and most satisfactory way is for the grower to buy his fertilizer either mixed or simple, fixing the price on the basis of the plant food contained in it, or as it is often called, "on the unit basis" and paying for it only after having had it sampled and reported on by the State officials.

(This analysis is made by the University for individual farmers at $2 per sample, but is not encouraged because the field inspectors and laboratory force are reasonably effective in holding manufacturers to their guaranties.)

The decision as to the amount or the proportions of the different plant foods to buy for your trees or other crops depends entirely on local conditions, and cannot be prescribed offhand or without knowing well all the conditions, but it is safe to say that no better evidence as to the needs of the tree can be found than the tree itself, either in its physical condition or its yield. Many advocate soil analysis but no chemist can make a more delicate analysis or set it forth in more vivid language than is to be found in the leaves and fruit of a tree. Of course one must know the language and in this as in other things there is no royal road to learning.

One might have ever so bountiful a supply of the elements of plant food and get no results because there was a lack of the agents such as moisture and humus to make the food available to the tree, yet an analysis would show that there was plenty of the various foods in the soil. The moral is to base all your study on the tree itself, learn its ways, consider its environ-

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

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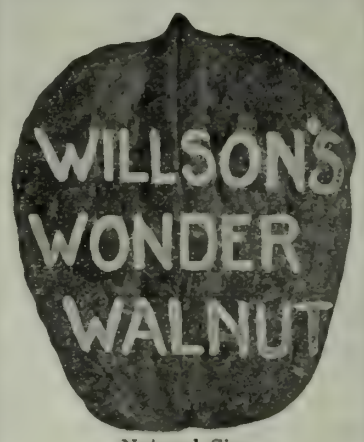
THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.



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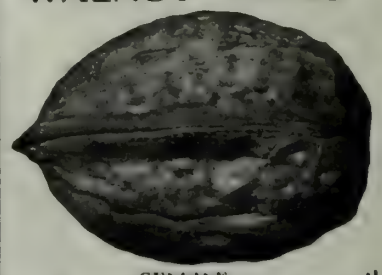
WALNUT TREES



GENUINE

FRANQUETTE AND SAN JOSE MAYETTE

Both Grafted On.

Cal. Blk., 6 to 8 ft., $60 per 100, 75c ea.
4 to 6 ft., $50 per 100, 60 cents each
3 to 4 ft., $40 per 100, 50 cents each
2 to 3 ft., $25 per 100, 30 cents each
California Black Walnuts $8 per 100

FRANK GRECO

423 Josefa St., San Jose, Cal.

ment and above all don't jump to conclusions.

This paper will be followed by others giving an outline of the work and value of each of the several elements of plant food, dealing with the question from the standpoint of the man who has to buy the goods.

NON-RESIDENT PROBLEMS SOLVED.

[Written for the PACIFIC RURAL PRESS by H. A. Huntington.]

As in almost every new and attractive orchard section the Yucaipa apple district southeast of Redlands has a large acreage of young trees whose owners do not live in the valley and are more or less dependent upon professional caretakers for the condition of their orchards. For the information and protection of the non-resident owner and with the thought of keeping the standards of the valley's orchards as high as possible the Yucaipa Growers' Association has elected a committee of five to be known as the Yucaipa Orchard Information Committee. The following duties were outlined at a mass meeting of the growers.

1. To make reports based on personal inspection of each orchard to the owner of same when requested to do so by him. These reports will cover all conditions affecting the state of the orchard at the time of inspection except as to insect pests; and a small fee will be charged to cover the actual expense of the inspection.

2. To observe the general cultivation of orchards in the valley, and when a case of extreme neglect is found, to notify the owner and see if an improvement can be made.

3. To obtain and furnish information by the use of which non-resident owners may keep in closer touch with the needs of their orchards and the work of their caretakers.

It is realized by the Association that, while every man has his own ideas on the care that should be given a young orchard, still there must be a certain standard culture if the valley is to become the model district that its progressive people are striving to make it. A large number of letters from non-resident owners favoring the appointment of such an information committee were read, and it is believed that this step will mean much for the future appearance and prosperity of the Yucaipa district.

[This looks good to us if it is not for exploitation purposes.—Editor.]

SALWAY PITS FOR SEEDLINGS.

[Written for the PACIFIC RURAL PRESS.]

People used to use Salway peach pits for seedling nursery stock. They also used Oregon wild peaches. Of recent years the pits of earlier varieties have been used, and this has resulted in the discovery of valuable new varieties of both clings and freestones. But according to A. Thiele of Fresno county, it has resulted in deterioration of our peach stocks. While he raises few if any seedlings for sale, he uses Salway pits for his own because they have a longer season to grow themselves most perfect so they will produce the most active root systems.

OILING BLACK SCALE ON OLIVE.

[Written for PACIFIC RURAL PRESS.]

Two "frightful" cases of black scale on olive have recently been sent to our office from Contra Costa county for identification and remedies. They showed no signs of the scale parasite, which if present in large numbers, would have prevented the present serious infestation. The hot summer usually kills a large percentage also, but Contra Costa is not the warmest part of the State.

There is no hurry about the remedy. The damage for this year is done. The leaves are still more or less active and should not be coated with the emulsified oil spray which is the best remedy for the scale. Such a coating would tend to stop the leaf activity by closing the pores and may just as well be withheld till the leaves are practically dormant.

Black scales are most susceptible to oil sprays before they are half grown.

They are most numerous in that stage from now through January and later if the cool weather continues. Those hatched during that time will not grow much until the new buds swell in spring on account of cool weather and slow sap circulation for food supply. So the time to spray is a while before the buds swell.

While any miscible oil spray is good and effective, the most practicable for convenience and safety, according to Deputy State Horticultural Commissioner Geo. P. Weldon, is the distillate spray as formulated in Essig's "California Insects." Dissolve 30 pounds of whale oil soap, in 12 gallons of water, heating it to the boiling point. Add 20 gallons of 28 degree distillate and agitate thoroughly while the solution is still hot. When you are ready to use it, dilute this stock mixture with 20 gallons of water to one of the stock.

Since one female black scale often lays over 2,000 eggs in a season, it is very advisable to touch her with oil spray before she begins. There is only one way to be sure of touching every scale on the tree. That is to use plenty of fine driving spray under heavy pressure with a 45 degree nozzle and a conscientious workman who will put it to every quarter inch square on the tree.

This applies only to olives since fumigation is the accepted remedy on citrus fruits.

INOCULATED LEGUMES.

Prof. C. W. Hendry in a lecture before the Farmers' Club at Oakley, Contra Costa county, referred to the high tide of wheat production in the State— 40 million bushels—and spoke of the general falling off which followed, until only about 20 per cent of that amount is raised. From twenty sacks per acre the yield has fallen off to an average of about six sacks.

The methods recommended by Prof. Hendry to increase wheat production are careful seed selection, deeper plowing, drilling instead of broadcasting, rolling before seeding, early seeding, turning under the unburned stubble, and using inoculated legumes in rotation with wheat to bring back nitrogen and restore humus to the soil.

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Country Vegetables

Tomato picking in all directions for the canneries may be seen around Lorenzo in Alameda county. Some Ponderosas but mostly Trophys are grown, and they seem to have grown knotty and wrinkled. At the cannery the wrinkled ones must be cut into several pieces to get all the skins and cores out. This puts them into the lower grades for which, of course, the cannery cannot realize as much. The same is true of those which do not ripen evenly. The green parts surrounding the stem must be slashed off and the tomato will mush. The tomatoes are scalded, then run out to the women who peel and core them. Smooth, uniform sized, uniform colored tomatoes are put into one bucket for the solid, extra fancy pack, to sell at the highest price. If they won't go in that grade, no particular care is exercised in handling them and the pay of the women is three to five cents per bucket, based on the grade of fruit produced.

With the smaller yield of the Stone, better prices must be assured before farmers will raise that variety about Lorenzo. Mr. Moran thinks that if a number of tomato growers would agree to raise only that variety, the cannery would would make a special advanced price. This would be analagous to the grading of cream or of dried fruits to encourage better quality.

The finest looking patch of Strawberry Rhubarb noticed in the the Lorenzo district belongs to M. S. Goulart. It yielded 450 boxes per acre this year, being three years old. It was not plucked clean of the last merchantable stalk, and is now green. This enables it to store food material in the roots for an rapid, vigorous growth in the early spring. The splendid yield is due to pump irrigation, such as is seldom practiced in that section. It is not far to water, the soil is heavy—almost adobe, and the climate temperate. The big winter growing rhubarb of South California would not do well in locations like the Lorenzo district according to its originator, J. B. Wagner of Pasadena, but requires a light soil of considerable depth. No rhubarb can do its best in any soil, however, without heavy fertilizing.

For a small patch of sweet corn in his back yard at Hanford, Al. Kenoyer received $30 a day or two before picking began, about June 1. He estimated that there were over 5000 ears in the patch, but circumstances proved this to be optimistic. G. R. Duffey, who bought it for his market in town, realized only 3500 salable ears from it, though he quit picking when he couldn't get more than a sack at once. The corn was eight or ten feet high and practically wormless, with many ears over a foot long and above a man's head. People would see it from the street and Mr. Kenoyer would have to send them to Mr. Duffey. There was a tremendous demand. He picked 125 dozen one Saturday night and was all sold out at 11 a. m. the next day. People bought 100 dozen a day when he could get that many, but the aim was to pick only alternate evenings. It had been planted early after the wet winter and was the first on the market. It was watered more or less with a hose. The side that got most water was the biggest corn.

WIRE WORMS IN POTATOES.

To the Editor: I am enclosing under separate cover two worms which I have found in my potatoes. They have done a great deal of damage, especially on some new soil which I broke up last year. I would like to know what kind of a worm this is? What I could do to eradicate them, and how? These worms seem to be the thickest where the land has overflowed and is covered with silt. The land was broken up two years ago. Last year I raised a fine crop of oats on it, then worked it up and planted potatoes.—Reader, Quincy.

[You have "wire worms." When you find a worm going straight into a potato it is probably a wire worm —unless the hole is about half an inch in diameter, and then it is usually made by a mole cricket or "California potato bug." If you find worms working around the surface and not going in very deeply, they are probably larvae of the potato moth.

Wire worms subsist largely on grass roots and are more apt to be abundant in moist places where the grass roots keep fresh. Break up the land, leaving the furrows on edge as much as possible and let the grass kill out by dry heat. Do this now. Then keep on growing grain till the land is clean. The thin roots of grain do not please them. After a while put in potatoes. Meantime try and get your potatoes from drier land, which will not grow grass late in the season.

Fighting wire worms in the garden can be done in ways which would take too much labor for plants grown by the acre. Sometimes a very thin scattering of nitrate of soda along the proposed rows will dispel such worms. They can also be killed by poisoning things which they like, like cut potatoes or other roots, green alfalfa, etc., and burying these in the ground in advance of planting, but the cost of all this puts it in the category of garden rather than field recourses. Rotation of crops is probably the most practicable escape from such pests.—Editor.]

PRODUCING COVER CROP SEED.

Why do not some of our producers of hay and grain go in for the production of vetch seed or some of the desirable clover seeds on lands where the crop could be assured by the use of water. We have seen vetch seed matured here without any special care and it seemed to show good as to quantity and quality and also showed a good ability to grow when planted—much better in fact than some of the imported seed. There certainly should be a good profit in the production of seed to sell at three to four cents per pound at home with an assured market which could no doubt be secured in advance. This would seem to offer a means of cleaning up some of the alfalfa land which needs working over in order to make the alfalfa a profitable crop.—J. E. Adamson, Pomona.

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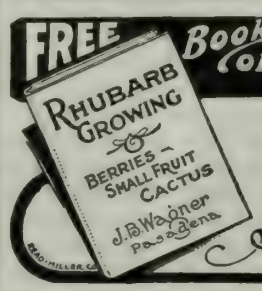

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THE DEAN IRIS GARDENS,

Moneta, California

Poison Oak Experiences.

[Written for PACIFIC RURAL PRESS.]

The writer has been swelled up and sticky all over several times with poison oak, and since this is a perennially interesting subject a word or two now may save others.

There was a time when he was reckless and would wade through the stuff absolutely without injury until a day or two later when scratching was business. Exercise of a little will power at first does allow the poison to run its course and go away. Application of most medicines subtly excites the itchy feeling, if not when applied, then as soon as the freshness of the medicine has worn off. Poison oak itch is one of that good kind which subsides after a minute or two of refraining from scratching after it has been excited.

But if you must get into it, don't eat some to make you immune as the writer has done with unsatisfactory results. Don't get into it any more than is absolutely necessary. Severity of attack is proportional to severity of exposure.

Yet it has not been so many years since the writer worked in it all summer in Feather River Canyon without being seriously affected. Cuticura salve rubbed on all exposed parts morning and noon proved as good a preventive as lard and lots more expensive. Since we were sweating freely, better results would probably have been obtained by four applications of greasy material daily and a good soap scrub at night. But while at other times without use of grease, blisters have formed till they hung down over his shoetops, there was no infection on the ankles and there was bad infection about the knees, showing that is passes through cloth but not leather. Therefore, if you are to be much exposed, wear high-top leather shoes, leather gauntlet gloves, and a leather mask. Leather garments may be stiff to wear but they don't itch.

The Mass. Expt. Sta. says "the toxic properties of poison ivy (which used to affect the writer back east similarly to the poison oak here) are attributed to a non-volatile oil which is found in all parts of the plant even after long drying. Minute amounts of this oil are capable of causing extensive inflamation. It is insoluble in water but may be removed by alcohol or destroyed by a solution of sugar of lead in alcohol."

The writer used sugar of lead in boyhood once. Thinking if a little was good more would be better, he put it on stronger than the doctor said and it nearly burned him up until he found the vinegar. It killed the poison but left the scare so it has not been tried since. But if it "destroys the oil" it ought to be good medicine if taken moderately and will be used at the next infection. If it proves of value it will be the first of two or three legions of remedies we have tried. So far, the only effect of medicine has been to excite itching sooner or later, by the very act of applying it. Better shun poison oak like a snake.

WORSE THAN BUGS.

What do you think of this farmer? A fruit shipper recently received an order for 15 packages of red nectarines.

"It is too late in the season," he said to himself. But the same afternoon a farmer brought 16 packages of red nectarines to him for shipment. Fifteen were immediately sent to the customer. The other was taken home for family use and the two layers underneath were found to be little peaches. Now little peaches sell at a third or a fourth of the price of red nectarines. We noted in an article last spring the use of oak balls for a similar purpose. We have also noted the statement of G. Harold Powell, head of the California Fruit Growers' Exchange that nothing but law will prevent most of the fruit frauds which bring profit to the perpetrators.

WHERE THE FARMER STANDS IN ACCIDENT COMPENSATION.

To the Editor: Some farmers around here, and I presume in other parts of the country also, say that the farmer is responsible under the Workmen's Compensation Act, passed some time ago, and some say he is not; that is the latter are of the opinion that if a man working for a farmer is injured through no defect in the farmer's equipment the farmer is not held responsible, and will not have to compensate the injured party. For the benefit of myself and others, who read your paper, could you give the desired information?—F. E. S., Reedley.

[Written for PACIFIC RURAL PRESS.]

This matter has been fully explained to the readers of the "Pacific Rural Press" a number of times, but may be briefly restated:

There are in this state two laws governing liability of employers to the persons injured while in their employment. These are:

1. The law of liability damages based upon want of reasonable care on the part of the employer or someone else in his employment. These cases go to the courts, and the damages are fixed by juries, and the employer stands to pay what the jury is minded to assess against him.

2. The Workmen's Compensation, Insurance and Safety Act does not apply to employees "engaged in farm, dairy, agricultural, viticultural or horticultural labor, in stock or poultry raising or in household domestic service," but it does apply even to farmers as to all other kinds of labor. Under this law, the liability is limited strictly, and if there are controversies, they are settled by this Commission, generally without much of any expense to either party, and with little delay.

The insurance rate for protection under both of these laws is now just the same; that is, $1.50 upon each $100 of payroll, earnings or wages of the employee. There are now in excess of two thousand farmers who have, however, accepted the compensation provisions of the Act with relation to the excluded classes of employees, because they feel that they will be safer under the Workmen's Compensation, Insurance and Safety Act than under the law of liability damages based upon negligence.

A. J. PILLSBURY,
Chairman Industrial Accident Board.

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Agricultural Review

DECIDUOUS FRUIT AND NUTS.

Prunes have been selling lower because the estimated 1000-car French crop has been moving, both to England and the United States. Some from California have gone to Denmark and Holland. It is believed that many of these reach Germany.

Shipments of fruit from Selma via San Francisco and the Panama Canal are being sent up the Mississippi to Chicago. There is a lack of boats for the Panama route.

The Cured Fruit Exchange has reported apricots and peaches very slow but they are hopeful for prunes later in the season and packers point to the steady exports as a hopeful sign. One packer says the California production this year about equals the consumption in the United States. Another packer claims the British government is inquiring in Santa Clara Valley for 1000 tons of prunes.

Five carloads of dried apples were shipped from Sonoma county last week.

A Watsonville firm has sold 500 carloads of fresh apples to Great Britain.

Fruit growers who signed up their crops with the Farmers' Union Inc. in Santa Clara valley under misapprehension of the facts have refused to deliver and have been sued for non-fulfillment of contract. But they have a committee which is defending them legally and getting favorable decisions.

Apropos of the Austrian method of freezing the water out of fresh grape juice to avoid the boiling which destroys the natural flavor, the United States government has applied similar methods to apple cider. A mill is thus to reduce 5,000 gallons in Oregon this fall for commercial test. The frozen cider is crushed and placed in a centrifugal cylinder like sugar. A syrupy liquid is thrown out and the ice, which is pure water, is retained. The syrup keeps sweet long periods at ordinary temperatures and has the original flavor when diluted with water.

Contra Costa county farmers have been investigating means to control the red spider infestation of almond trees. R. H. Taylor of the University Farm says the thing to do now is for the whole community to spray all infected trees under high pressure with crude oil emulsion or lime sulfur 1 to 10. This will kill 98 per cent of the eggs if rain does not wash it off too soon.

Walnut harvest is on. The hopeful tone on all hands is due to high quality and high prices. Over two tons per acre are reported from nine-year trees in the San Joaquin valley. The Stanford Vina Ranch has about four tons. Santa Barbara's Jumbo grade are being used as samples of California's best by agents in the East.

Chestnuts from Sacramento Valley are selling to southern and eastern states at 17 cents.

CITRUS AND SEMI-TROPICAL.

G. Harold Powell has been in Washington, D. C., in conference about government cooperation to prevent shipment of unripe fruit, especially oranges. Remembering the disastrous effect to the Fair Oaks company which last year bought and picked green oranges presumably for Australia and sent them East, we wonder if the carload of this season's crop sent Oct. 6 from Oroville to Australia was rather unripe. The Butte County Citrus Ass'n has doubled the capacity of its packing plant to three cars per day. They expect to handle more than 40 cars this season, and hope to get it all off before Christmas.

This early crop is overlapping the southern late crop where the McPherson Heights Citrus Ass'n of Orange county estimated about 40 cars to move after Oct. 1. Prices there were improving last week.

New oranges were sold on the Stockton market Oct. 6, the date the foreign shipment was made.

Tulare county recently adopted a strict ordinance regulating importation of fruit stock, and the disease fighting such as has been going on there under county auspices. The gray scale, the cause of the special county work there, had also appeared in Fresno county but is reported by horticultural commissioner F. P. Roullard as dying out satisfactorily.

A Riverside orange grower recently paid $135,000 cash for 110 acres of oranges, lemons and pomelos and 100 acres of bare land north of Porterville.

The packing houses of that section are recommending day labor rather than piece work in orange picking. This is to send the fruit East in prime condition.

A new orange jelly, the process for which has been developed by University experimenters, is being sold at the Fruit and Flower Mart in the Greek Theater at Berkeley Oct. 16 and 17. An orange juice beverage, orange marmalade, and four kinds of grape juice made from California grapes are also on sale to test the public taste.

Fig growing in the heavier well drained soils of Merced county is being advocated on the strength of the showing made by several orchards in various parts of that county.

A carload of white Adriatic figs was recently shipped to San Francisco from the Thermalito district of Butte county.

The first ripe olives commercially processed in Tulare county are being put into tins at the cannery of the Tulare County Growers' Ass'n. About 125 tons have been signed up with them and the olive processing machinery installed as a result of the difficulty encountered by the Lindsay Olive Growers' Ass'n in selling its crop to the packers.

GRAPES.

A hundred cars of grapes were shipped from the State in the week ending Oct. 10, by the Cal. Fruit Distributors. During the same week the Pacific Fruit Exchange shipped two cars from Loomis, Placer county, to Seattle, in open lug boxes.

About 200 tons of Tokays from 30 acres is claimed by M. J. Kline of Riverbank.

Emperor grapes are being shipped from Dinuba packed in drums.

Seeding of new Muscat raisins

PEORIA DRILLS Save Seed Increase Yield

Pity the Poor Bird!

—who follows a Peoria Drill. There isn't a chance for him to get a bite of grain, for the patented disc shoe deposits it all at the exact depth desired on the bottom of the furrow. Moisture is secured and the wind cannot uncover the seed. Being planted at an even depth, grain germinates and ripens evenly.

Peoria Drills are made right in every particular. Frames especially strong. High steel wheels. Feed is governed by speed; accurate, never misses; the only really reliable feed.

Write for information about the Peoria before you buy.

Newell Mathews Co.

ESTABLISHED 1886

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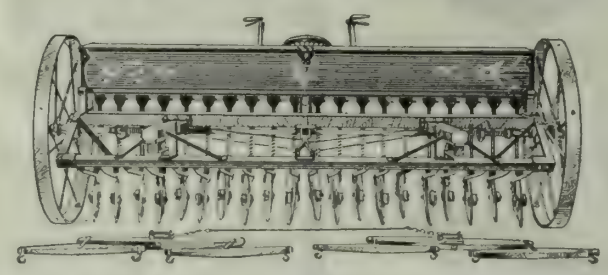

FRUIT GRADERS

The Schmeiser Olive Grader.

Separates the Extra Fancy Grade First—Saves Money

Grades the fruit in five sizes.

The Best Graders for Olives, Prunes, Apples, Lemons, Oranges

For further information write

Schmeiser Manufacturing Company

DAVIS, CALIFORNIA,

Manufacturers of

Sure Pop Almond Huller and Separators,
McGarvin Fruit and Olive Graders,
Schandoney & Harrington Equalizing Hitches,
Schmeiser Improved Portable Automatic Derrick,
Schmeiser Alfalfa Land Leveler and Checker.

"The Schmeiser Way Makes the Farm Pay."

PIPE

For Every Purpose NEW Threads and Couplings Hot Asphaltum Dipped

2nd Hand and New

Screw Casing Fittings and Valves Guaranteed for Pressure

PACIFIC PIPE CO., 4Main and Howard Sts., San Francisco

commenced in earnest in Fresno last week. They are moving only in small lots as yet, though over 50 per cent of the crop controlled by the Associated Raisin Co. has been booked on orders from the East. It will be remembered that vigorous work cleaned up last year's crop just before the new early raisins started to market.

The Associated Raisin Co. is having trouble to enforce the contracts made with a few of its members. One such member who claims the Associated was to rent and use his packing house, but didn't, refuses to deliver the crop according to contract, and charges the company with being an undesirable monopoly.

Association attorneys have little fear of the outcome, but it seems regrettable that such a cooperative project, built on such strong lines and having shown such good work, should be crippled by those who share the benefits without contributing to its support.

GRAIN AND HAY.

A whole Kansas town was depopulated of its male citizens recently when the farmers persuaded even bank clerks to get busy in the sunny fields.

There is practically no market for alfalfa hay in Glenn county, and grain hay has sold as low as $4.50 per ton baled and delivered at railroad.

Grain warehouses are full on the west side of Sacramento valley and nothing moving.

A heavy acreage of wheat will be planted in Colusa county where barley has grown before.

It is said the railroads will lodge a protest with the government against the rise in price of flour. Thousands of their cars are idle, grain elevators all over the United States and at ports of export are full; and along at least one railroad only 20 per cent of the wheat has been threshed for lack of a place to store it or move it to. This is the reason for idle cars and it would seem that American flour ought to be cheaper rather than higher.

In a ton of straw is plant food worth $3 according to the Oregon Agricultural College. There is also humus that would enable bacteria to make more plant food available, a great chance to make stubborn soils more friable, and to make dry soils hold moisture better. The total value is estimated at $6 a ton. Let it not be burnt.

Kansas kaffir corn has deteriorated and yields considerably less because of poor seed selection. It isn't so hard to walk through the field with shears and a sack to clip and save the best heads grown on the healthiest stalks. Not only this, but seed should not be taken from edges of fields next to other sorghums, because kaffir mixes easily.

Three-cornered alfalfa hoppers girdle growing plants in the country from Santa Barbara county southward and may become a serious pest. U. S. D. A. recommends destruction of their winter quarters as the best means of control. They live over winter under bunches of weeds, grass, rubbish, etc.

About a fifth of the alfalfa seed used in the United States is imported. Practically all of this comes from Russian Turkestan. The commercial imported Turkestan seed is declared by the U. S. D. A. to be very inferior and to produce inferior plants and yield. It may be identified by the presence of more or less Russian knapweed seed which is most always mixed in this but not in alfalfa seed from France or Italy. Knapweed seed are chalky white, slightly larger than alfalfa seed, somewhat smoothly wedge shaped, not notched; and they cannot be cleaned out thoroughly by any known machinery.

IRRIGATION NOTES.

A million dollar water company has taken up the work and rights of the Surprise Valley Water Co. in Modoc county and will complete the diversion of Cowhead Lake to the 320,000 acres of fruit and alfalfa land in Surprise Valley. It is expected to be one of the most easily and cheaply operated systems in the State.

Nevada county is planning an irrigation district to serve themselves better than the P. G. & E. seems disposed or able to. The proposed cost would be $38,000 to irrigate 10,000 acres with easy chance later to serve 20,000 acres additional.

Oakdale Irrigation District voted $400,000 bonds last week to complete cement canals and furnish water to new acreage. They have also reduced their tax rate 20 cents per $100 in spite of special expense last year.

Germain SEED & PLANT CO. Established 1871
326-328-330 SO. MAIN ST.
LOS ANGELES. CALIFORNIA

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Dutch Bulbs

Our 1914 Importation of Bulbs from Holland has just
ARRIVED
Buy early to get varieties.
Bulb and Fall Planting
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BIG MONEY in the OFF SEASON

One Man can run it.

There's a big demand for Irrigation wells throughout California and the Southwest. *You can Make Big Money during your spare time with the*
IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE
Bores a 100 foot well in 10 hours. Will go through gravel, sand or clay; drills through rock. One team takes it over any road. Operated by same team or by gas engine if preferred. No tower or staking; rotates its own drill. FREE Catalog; Easy Terms.
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Benicia-Hancock DISC PLOWS

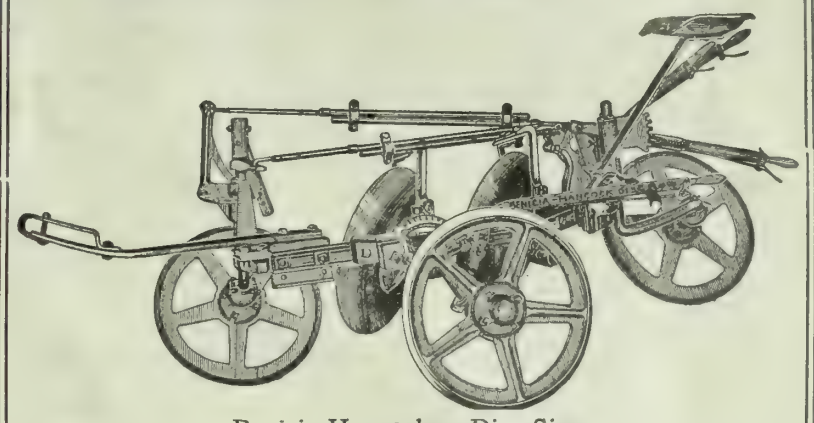
THE PLOW WITH A PEDIGREE

The man behind the hoe selects the livestock after due consideration of its lineage; his plant life, seeds, etc., must have the right genealogy before he buys.

Then why not a plow with a pedigree—the tool that tills the soil that makes the profits.

Benicia-Hancock Plows have advanced from stage to stage—keeping abreast or ahead of the times—and today without question heads the list, and represents the very highest type of plow manufacture.

THE PLOW YOU WILL EVENTUALLY BUY



Benicia-Hancock, 2-Disc Size.

A few exclusive features: Lighter draft than any other; number of discs and size of cut may be increased or diminished as desired; easier of operation, and simple of construction.

ABSOLUTELY GUARANTEED—YOU CAN'T LOSE
WRITE FOR FURTHER PARTICULARS
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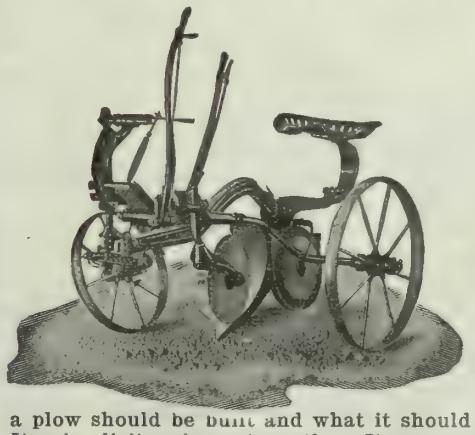
A Record Smasher!



We have won the patronage of the farmers through the merits of many styles of plows, but we have never offered a plow with the trade getting qualities of

Oliver No. 11 Sulky

It grips every farmer who sees it. It satisfies fully and quickly every notion he has held as to how a plow should be built and what it should accomplish.
Its simplicity gives strength. Its compactness lessens the draft. Its construction makes it convenient to handle. It substitutes a greased wheel for the friction of a grinding, binding draft producing landside.
WE WANT TO PLACE A FULL DESCRIPTION OF IT IN YOUR HANDS. WRITE US

Oliver Chilled Plow Works, San Francisco

Oak Grove Berkshires

Cholera Immune
Our herd is Cholera Immune, the only immune Berkshire herd in the State.
Five herd boars in use and they are second to none on the coast. Our sows are of equal merit.
We have at present some 300 Berkshires and we know that we can supply what you want. Write us or call.
Oak Grove Dairy Farm
H. G. ARMSTRONG, Prop. WOODLAND, CAL.

Mechanical Power on the Farm.

TURN THE FAUCET FOR WATER.

[Written for PACIFIC RURAL PRESS.]

When the agricultural college graduate returned home and got some good healthy country dirt on his anatomy, he incurred the displeasure and scorn of the folks because he got a tub of cold water out behind the shed and splashed till the dirt was off.

That day is passing. Now, when he returns, his splashing inclinations receive more sympathy at home. And all over the settled sections of California the farm homes are installing bath tubs and all the conveniences that go with running water in the house.

The most noticeable sight in many sections is the closed tank houses on every hand. Some of the tanks are filled by windmill power, more of them are filled by oil or electricity.

A model one of these was recently built by Geo. I. Thompson of Lodi. In it he can store 1000 gallons of water for the house, which is a new bungalow, and for the stock. One filling will last two weeks if necessary, but it won't be necessary.

Between the tank house and the well is just space enough for the engine and pump. A 3 h. p. gas engine and 2 inch pump have been doing the work, but since Mr. Thompson's health is poor, and he expects also to irrigate 10 acres of alfalfa, he feels that an electric motor of 7½ h.p. and a 4 inch pump will suit his conditions better, and will in the long run be more economical. In winter, he drains the pump dry every night.

For irrigation, the water is turned into a concrete standpipe three feet in diameter, six feet high with walls three inches thick. This is connected by underground pipes to the alfalfa checks.

For the house and stock, the water is forced about 25 feet high to the top of the tank. It is directed to the center, not toward either side, because that starts circular motion of the water within. Thus, when the pump is running steadily, the water might be and has been a foot higher around the edges than in center. The overflow pipe does not take care of it in such motion and the result was a drenching of the platform until the water was directed toward the center. An indicator shows plainly the depth at all times.

The concrete foundation 10 feet square cost Mr. Thompson $25. Redwood lumber for the tank house cost $125, labor $50, painting $50.

Unplaned resaw covers the framework of 2x4's with 6x6 corner timbers and double X braces. A "Dutch" roof protects it ornamentally, and in the triangular openings where the vertical 1x4's at the corners cover the siding, wedge-shaped pieces have been sawed and inserted smoothly. When painted, it will present smooth solid corners to the weather.

The tank rests on 2x12 inch joists separated from 8 inches apart at the center to 15 inches apart at the edges. It is made of galvanized iron, 18 gauge for the bottom and 20 guage for the sides, and cost $25.

The lower floor is used for a wash house, being fitted with set tubs, waste pipes and supply pipes from the tank via the house. The upper floor may be put in at any time and used as seems best.

One door with glass front opens outside, another opens directly into the summer kitchen.

A pipe runs from the big tank to a smaller metal tank in the house, entering the latter about four feet above its bottom. An outlet through the bottom runs the water through a coil in the cook stove which discharges into the upper end of the tank and thence into the circulation of the house. Another pipe supplies cold water so that hot and cold water are available for bath, toilet, wash basin, kitchen, sink, and wash tubs.

The cold water is available for lawn irigation, stock, and fire protection.

DISKING AND DRILLING.

To the Editor: After plowing, the first duty of a man is to guarantee the work by proper cultivation and disking. Without delving into the chemistry of plant life too deeply, the growth of a plant is determined by the proper preparation both in the soil and out of it, of air, water and certain salt compounds. Rainfall, sunlight, and air in conjunction with the soil have a knack of assembling these elements in such a way that the plant grows; or failing to assemble them in such a way that the plant fails to develop. Nature has provided for this intermixture of elements for a limited time and plant life will go on without much outside interference, but, like so many other forms of natural activity, it is possible for human intelligence to greatly increase the effectiveness of nature's work. The disk harrow is one of the leading nature aiders in farming. It is said that rightly used it does more to increase crop profits than any other farm implement and should be used on every farm. It is one of the simplest implements made; one of the easiest to obtain; simple to run; will stand much hard work; and lasts a long time. It is so inexpensive that if used on a fair-sized field, it will so increase the production that it soon pays for itself. In certain parts of the United States, a farm without a disk or two is as curious a sight as a farm without a wagon, but in other parts, it is still on the threshold of universal

Exterminate Morning Glory

Johnson Grass, Noxious Weeds and Injurious Insects with NONPAREIL

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums.

Waste no time. Tell us how many acres you want to treat and the crop you are planting. The growing season and not the dormant period is the right time to do the work.

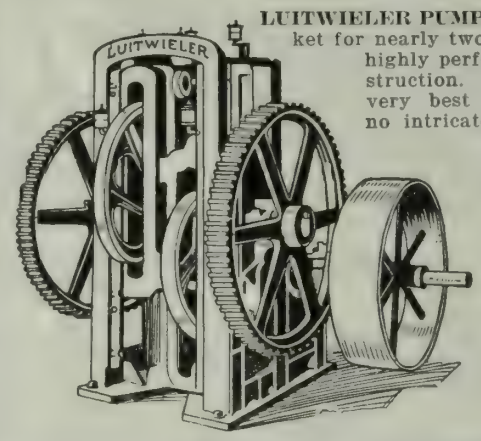
One grower purchased during 1913, $2000.00 worth of "NONPAREIL," has purchased several hundred dollars worth during the month of August this year to finish up odds and ends that were not treated last year. Having experimented for the past four years, he knows what he is doing.

ON SMALL ACREAGES cut away the top of the plant, about four or more inches below the surface. Apply "NONPAREIL" with a squirt can on each root and cover with soil at once, (3 teaspoonsful for each root is sufficient). Keep cans well stoppered as Nonpareil evaporates very easily.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphis, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

WHEELER, REYNOLDS & STAUFFER
624 California Street. San Francisco, Cal.

Luitwieler Pumps Give Continuous Service



LUITWIELER PUMPS have been on the market for nearly two decades and have been highly perfected in design and construction. They are built of the very best materials. They have no intricate mechanism. All parts are easily accessible. No pit is required. No clutch when electric motor is used. Water at the least cost is produced with LUITWIELER PUMPS.

Write today for our Catalog No. 11.

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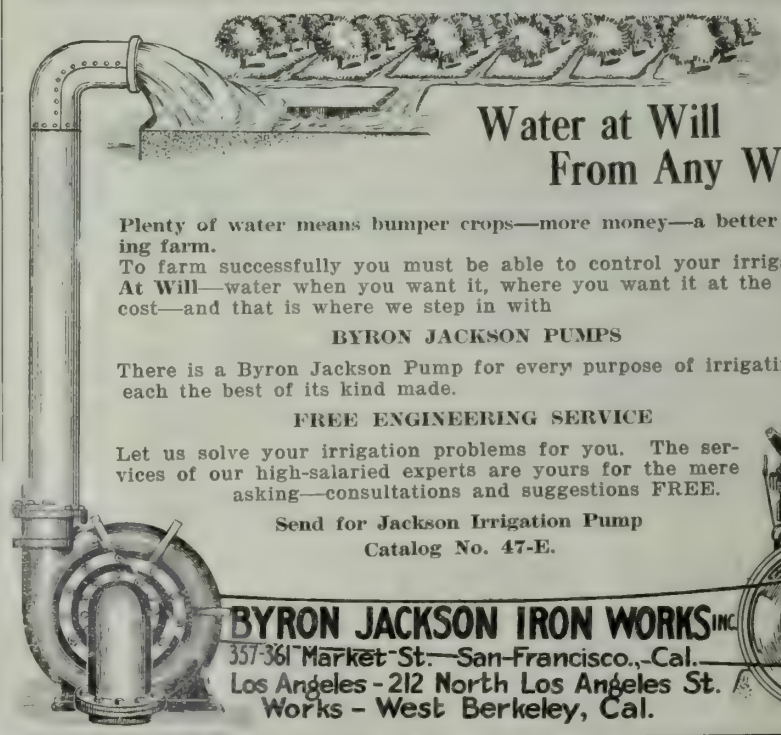

Water at Will From Any Well.

Plenty of water means bumper crops—more money—a better paying farm.

To farm successfully you must be able to control your irrigation At Will—water when you want it, where you want it at the least cost—and that is where we step in with

BYRON JACKSON PUMPS

There is a Byron Jackson Pump for every purpose of irrigating—each the best of its kind made.

FREE ENGINEERING SERVICE

Let us solve your irrigation problems for you. The services of our high-salaried experts are yours for the mere asking—consultations and suggestions FREE.

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"American" Service

means expert advice, absolutely FREE, as to how your irgation system should be laid out. It is based on knowledge acquired through the experience of many years. "American" Surface Irrigation Pipe was the first pipe made with the double locked and soldered seam. It is the strongest on earth—more convenient to handle—and far superior in every way to any other irrigation pipe. You owe it to yourself to get the best. We have it. Write for catalog. Do it today before you forget. Also manufacturers of ORCHARD HEATERS.

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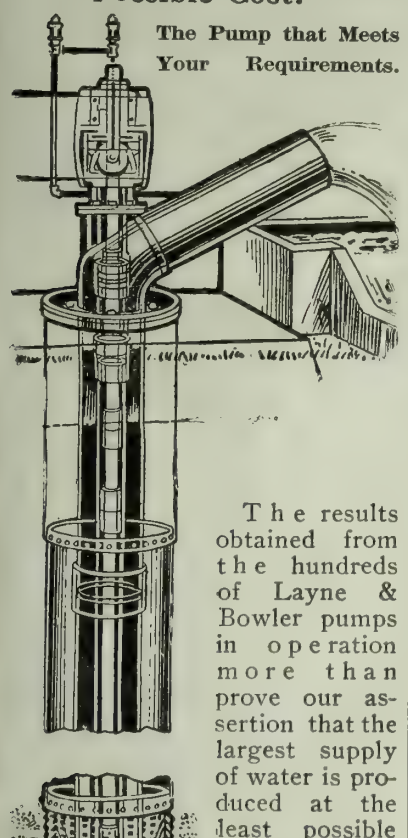
The Layne & Bowler Pump

Secures the largest supply of water at the least Possible Cost.



The Pump that Meets Your Requirements.

The results obtained from the hundreds of Layne & Bowler pumps in operation more than prove our assertion that the largest supply of water is produced at the least possible cost.

The Layne & Bowler Pump is built to work successfully under every condition. There are no plungers, rods, valves, cup leathers, or intricate mechanism of any kind. All adjusting is done on top of the ground. No pit. Built to pass inside of casing from 9⅝ to 30 inches.

Our irrigation and water developing experts are at your service to assist you. Write for free advice.

Our Catalog No. 25 gives detailed information. Also tells about the Layne Patent Water Well Screen and Steel Pit. Every irrigator should have this booklet.

Layne & Bowler Corp.
900-910 Sante Fe Ave.
Los Angeles, Cal.

use.

Professor Daniel Scoates of the Agricultural and Mechanical College of Mississippi, says: "The disk harrow's special duty is to take the soil after the plow has done its work and put on the finishing touches. The result of these touches acts in different ways under as many circumstances. If the land receives a heavy rainfall, the disking allows the soil to take up larger quantities of this moisture than could be obtained under the former condition. Then the absorption of this water has not only the benefit of storing up moisture for the future use of the plants, but by allowing the water to soak into the ground, it prevents, to a certain extent, the surface washing of the land. Further, the disking besides fining the soil, is an advantage in that it forms a mulch which breaks up what is known as capillarity, thus causing the rapid evaporation to cease and saving up the moisture stored in the soil."

Seeding Helps Make the Crops Secure.—After the seed bed is in a condition satisfactory for the proper development of the seed, the next important step is to be sure that the seed is sown just right. It is only within recent years that definite, decisive tests have been made between sowing with a drill and sowing broadcast, but so one-sided have been the various tests in regard to these two methods that broadcasting is fast being numbered among the many methods which farmers are now discarding. Broad-casting requires more seed, and yet it produces a smaller crop of lower-grade grain. The reason for this is that the seed thus sown is not distributed evenly over the ground. It does not all start from an even depth, nor does it begin germinating uniformly. By the use of an ordinary drill even without the more modern attachments, the seed is deposited in fine, slightly compact, moist soil, all of it at a uniform depth. It is carefully covered by the cover chains or press wheels; it all has an even chance of germinating, and all the grain will tend to ripen at the same time. It requires, furthermore, much less seed to get a good stand with a drill than by broadcasting.

Proper disking and proper sowing give a good crop. There is very little more expense in doing it right than in doing it wrong, and the returns are much greater.

SHEEP ON MORNING GLORY.

To the orchardist, vineyardist or vegetable grower, wild morning glory is just about the worst weed pest one can imagine, and in some sections there are many large tracts which are almost worthless for farming due to this same weed.

To the sheep grower however, morning glory pasture is just the opposite, according to Ted Ballard, shepherd for Bishop Bros. of San Ramon. He has found that his flock prefers such pasture to any other in his locality, keeping the plant eaten down to the ground at all times. As the plant grows rapidly under unfavorable conditions for most other plants, it has an added value in that it furnishes a succulent feed when other such feeds are at a premium, except in irrigated fields where alfalfa is being grown.

The Use Of Hercules Dynamite On Farm, Orchard and Ranch

HAVE You Received *Your* Copy of "Progressive Cultivation"?

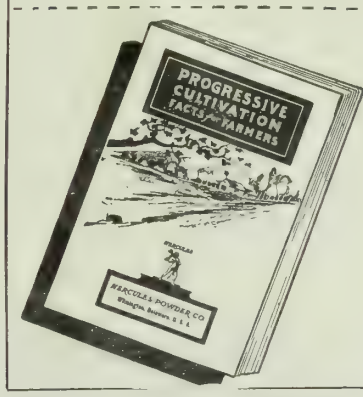
AMONG the hundreds of coupons we receive every month requesting copies of "Progressive Cultivation" there are always a few the senders of which have neglected to fill in the lines provided for the name and address.

We do not want any man to feel that we have neglected his request. In cases where name and address are lacking, however, we can do absolutely nothing.

Have you written for "Progressive Cultivation" and not received a copy? If so you probably mailed the coupon in a hurry and forgot to fill it out. Will you please send the one at the bottom of this announcement, giving your name and address in full. The book will reach you promptly.

If you have never asked for a copy of "Progressive Cultivation" it is high time you did. From cover to cover it is filled with money saving, time saving information. It tells how and when to use dynamite for sub-soiling, tree planting, irrigation work, rock and stump blasting, drainage work, excavating, felling trees, and many other purposes.

Thousands of farmers are now using Hercules Dynamite and with its aid doing more work and getting better results. If you are not among them please fill out the coupon below *fully* and mail it to us. Your copy of "Progressive Cultivation" will be sent you at once.



HERCULES POWDER CO.
Chronicle Bldg., San Francisco, Cal.

Please send me a free copy of your book, "Progressive Cultivation." I am interested in Dynamite for

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KT IRRIGATION SYSTEM

Saves Water, Land and Labor

NOW IS THE TIME

to install your Irrigation System. So many wait until Spring. It is impossible for all to receive prompt service at that time. Get in ahead of the rush by letting us plan and install your System **NOW**. Much time and annoyance can be saved in this way.

Write today for full information regarding the famous

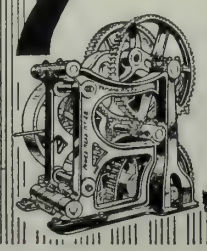
K-T SYSTEM OF IRRIGATION

It will save you money, land and labor—as it has hundreds of others all over the Southwest.

Kellar-Thomason Co.
"Originators of the Valve System of Irrigating."
1234 East 28th St., Los Angeles
Sales Office and Show Room,
105 North Los Angeles St.
"Ask your Dealer or Contractor."

POMONA DEEPWELL PUMPS

"The Next Pump I Buy Will Be a Pomona."



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WRITE FOR CATALOG NO. 54P

Gives valuable irrigation data.
Sent free to any address on request.

POMONA MFG CO., Pomona, Cal.
LOS ANGELES OFFICE: 930 Investment Bldg.

With the Livestock Men

Stockmen of Trinity county are selling cattle to avoid winter feeding.

L. T. Miller of Modesto is moving his 25 cows to a 20 acre ranch near Oakdale.

The Trinity Land and Cattle Co. recently sold 180 fat steers at $70 to $75 a head.

Frank Garteiz has shipped twelve cars of sheep to Lovelock, Nev., to feed for market.

Gorham and Rankin of Winnemucca, Nev., last week shipped three cars of horses to St. Louis.

Many cattle are driving down through Placer county from the cool mountains to forage in the big valley.

The new cow testing association at Gridley has started with a good number of cows, at a charge of $1 per cow per year.

There is considerable hog cholera around Williams, Colusa county, and along the river but very little around Willows, Glenn county.

An average of $225 per head of registered Holsteins was paid for six of them recently by C. W. Carey of Tulare county to W. F. Stewart.

Hogs on the west side of the Sacramento valley are ready to market off from stubble but being held on account of prevailing low prices.

The Ferrell ranch near Pomona recently purchased 60 pure bred Holsteins. Several hundred such have have been imported to this section.

U. E. Mullich of Willows says there are 100 per cent more dairy cows in Glenn county than last year, but a large proportion are not fancy stock.

The Hog Raisers' Association of Imperial valley held a meeting last week, addressed by men from the University and the U. S. D. A. It was acknowledged that hog cholera can be prevented by careful sanitation and serum inoculation.

Mr. Morris on the Wood Ranch in Tulare county paid $525 for three registered Holsteins under nine months old. Such prices might be suggestive to new dairymen of the Sacramento valley. Why not raise that kind of stock, of whatever breed?

Tilly Alcartra, a Holstein owned by A. W. Morris and Sons, had produced 28,000 pounds of milk 35 days before her year's test will have been completed. Since this figure beat the world's record for the same time over 600 pounds, a new high mark is expected.

The Estrella ranch of 45,000 acres near Paso Robles with all livestock and machinery has been traded to C. D. Hillman of Pasadena for Seattle property worth $675,000, and about $175,000 besides. Pure bred short horns and Holsteins will be featured. Alfalfa and wheat will also be raised.

A contract for delivery of 10,000 horses, presumably to Europe, at the rate of 1500 per month, is claimed by Z. T. Miller in a letter to G. N. McCollough of Inyo county. They must be 60 to 65 inches high, 10 per cent may be blue-gray, the rest all colors except white, all must be sound, fat, and saddle and halter broken.

Portland Union Stock Yards receipts, week ending Oct. 9 were: Light in cattle (987), and the best grades went at better prices ($6.50 to $7); heavy in hogs (5065), with good demand and a top price of $7.45 at close of market; light in sheep (6990), and the demand strong for the best. Wethers averaged about $5.20.

The Holstein consignment sale at Hanford Oct. 28, will dispose of 100 head of registered stock, 35 heifers, 50 cows and 15 bulls. A banquet will be given on the preceding evening to the members of the California Holstein Friesian Association, prospective buyers, and their lady friends by public spirited Hanford citizens. Those who wish to attend should tell J. W. McAlister of Chino at once.

Six of the commonest poison plants on the range, death camas, perennial lupine, loco weed, tall and low larkspurs, and water hemlock are pictured in nearly natural size on a chart printed by the U. S. D. A. Bureau of Plant Industry, Washington, D. C. It contains descriptions of the plants and tells symptoms of poisoning by each with whatever is known of remedies. Anyone may have it by writing for it.

CATTLE TO HOLSTEIN SALE.

To the Editor: I am consigning twenty cows, some with A. R. O. records. Cows related to such sires as Pietertje Hengerveld, Paul DeKol, Sarcastic Lad, Ignaro DeKol—all with many A. R. O. daughters with large records. There are also nine heifers from large producing dams and from a grandson of Hengerveld DeKol, the world's famous sire with 116 advance registry daughters, eight making over 30 pounds of butter in seven days. These are good for a foundation herd. No better females can be found anywhere. I am also consigning five grand young bulls; one is from a dam with two A. R. O. daughters. Two others from A. R. O. dams with large records. Their sire is Arcady Pontiac Wayne Hengerveld, a son of Pontiac Hengerveld Parthenea with 68 A. R. O. daughters. The best son of Hengerveld DeKol. Sunnyside herd has 125 choice Holsteins and I have chosen thirty-five of the best ones for the sale.

Visalia. R. F. GUERIN.

Last Call

for the

CALIFORNIA BREEDERS' CONSIGNMENT SALE

of

all tuberculin tested

100 REGISTERED HOLSTEINS 100

HANFORD, Cal. Oct. 28, 1914

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Caring for Fall Litters.

[Written for PACIFIC RURAL PRESS.]

It is now too late to add another pig to the fall litters, but the careful swine breeder will take great pains to see that every pig that is born will have the best of chances for growing into a marketable sized animal. It is the large losses at farrowing time and immediately following, which so materially reduce the average number of pigs matured from the litter.

In California we do not need the expensive buildings for farrowing purposes that are needed in colder countries, but one thing that is required here, as elsewhere, is well ventilated and clean quarters.

About a week before the sow is due to farrow, she should be taken from the herd, and given a runway of her own, one large enough to allow her to exercise and afford some kind of shelter. This shelter may be made in any old shed or barn, but of course it is better to have small houses built especially for that purpose. A dirt floor is all that is required, provided always that it is well drained, and it is a good idea to bed it down well with straw.

Clean drinking water is an essential thing to have in the pen and where possible alfalfa pasture should be furnished before farrowing and fattening feeds should be reduced.

The wise hog raiser has several sows farrow at about the same time, as in that way he can afford to spend the time needed in successfully handling the young pigs and sows, which is oftentimes overlooked where but one sow farrows at a time.

RIGHT AGE FOR BREEDING SOWS.

To the Editor: Can young sows be made to mate in a practical way? —G. W. S.

(Gilts will usually take the boar at an early age, but this practice is a poor one and is not to be commended. During pregnancy the sow is compelled to do double duty in sustaining herself and building her young, and if she is forced, through immature breeding to do both of these she can not be expected to do herself or the pigs full justice.

Considerable discussion was brought out on this subject at the last meeting of the California Swine Breeders' Association, and it was the general belief of most present that it is better to allow a gilt to get most of her growth before breeding for the above reasons. This naturally varies with different animals as some mature earlier than others and can better withstand the drain on their constitution, but as a general thing the sow that is bred at one year old will likely prove more profitable than those bred younger. There is, however, a good deal of dispute about what is the best age to breed sows and a discussion of this subject by growers through these columns should prove highly interesting and valuable.—Editor.)

CHEESE FROM ALFALFA FED COWS.

To the Editor: Can number one cheese be made from the milk of cows fed on alfalfa hay? Would much appreciate any information that you may give me on this subject.—G. H. H., Patterson.

(Cheese makers generally have not been able satisfactorily to handle milk from alfalfa-fed cows, principally because it requires different care than that given milk from grain hay or pasture-fed cows. There are, however, many cheese makers who are able to make good grades of cheese from alfalfa milk, a notable instance being on the Hubbard and Carmichael ranch, near Newman, Stanislaus county, and also convenient for your personal inspection. Some 300 cows are milked on this ranch and the entire product turned into cheese which is sold at top prices in the San Francisco markets.

Mr. MacWilliams, who owns one of the oldest cheese factories in Monterey county, found considerable difficulty in making good cheese from alfalfa milk last year, when, on account of lack of moisture, the grain hay crops were almost a total failure, he was compelled to feed alfalfa. He stated at that time that he found it impossible to make as good cheese from the alfalfa as he had been accustomed to making from grain hay, although he said that much depended upon the cheese maker.—Editor.)

COW DRYING UP.

To the Editor: I have a Jersey cow which had a calf in May. She was a good milker and gave the milk through all four teats. About three weeks ago this cow's milk started to drop off considerably, the udder near the hind teats becoming flabby and the hind teats shrinking. At present she gives the milk only through her front teats. I only get a few drops from her hind teats. She seems to be in good health and gets all she wants to eat. Can you tell me what is wrong with her?—T. P., Los Molinos.

(Your cow is drying. I cannot tell the reason why, unless I have further details from you. Possibly ration is unsatisfactory. Would advise feeding all the alfalfa hay, especially green alfalfa, that she will clean up and one pound of grain to each four pounds of milk given by her at the time she was in her fullest milking capacity.)

An estimated 20,000 acres are irrigated in Orange county by pumping plants. Such irrigation has changed pastures to orange orchards and raised the value from $100 to over $1000 per acre.

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We have consigned to the California Breeders' Sale at Hanford, Oct. 28th, individuals representing the choicest blood in our herd. The young bulls have type, breeding and A. R. O. backing, in fact all the essential qualifications of a sire for the head of a pure-bred herd.

PRINCE JULIANA DE KOL WALKER, born Aug. 5, 1913, son of the former world's record two-year-old, Juliana De Kol, 22.60 lbs. butter in 7 days, 92.47 lbs. in 30 days and 283.80 lbs. in 100 days, with first calf. She is a sister to Aralia De Kol and eight others whose yearly records average 21,492.1 lbs. milk and 867.82 lbs. butter. One of her sons has produced eight daughters that average 797.40 lbs. butter.

The seven nearest dams of this bull's sire average 29.07 lbs. butter in 7 days (4.2% fat) and his ancestry includes the greatest transmitting families known.

PRINCE JULIANA WALKER, born Sept. 5, 1913. One of the most handsome bulls to be found. He was first prize calf and junior champion at the 1914 state fair. His dam is one of the good daughters of Juliana King of Riverside with a yearly record of 772.18 lbs. butter. Her sister, Queen Juliana Dirkje holds the world's record as a three-year-old, 1021 pounds butter. Sire, Prince Gelsche Walker. The outstanding quality of this bull, together with the production and prepotency back of him, make him one of the most desirable young herd bulls in the country.

There will also be a ten months' old son of King Segis Pontiac Emperor, out of a 781-lb. granddaughter of De Kol 2d's Butter Boy 3rd (113 ARO Daughters).

A son of Lorena Korndyke, Grand Champion bull at Cal. State Fair 1913 and 1914, from a 26-lb. daughter of Juliana King of Riverside, that will make 800 lbs. of butter this year.

We are also consigning some good sound young cows and heifers, several of which are sired by a brother to Tilly Alcartra, that has produced 27,494.8 lbs. milk and 1070 lbs. butter in 321 days. They are bred to such sires as Segis Pontiac De Kol Burke and King Korndyke Pontiac. All sound and free from disease, good individuals and well bred. You can not go wrong on this kind.

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Pasteurizing for Safety.

[Paper read before Milk Conference by F. H. Bothell.]

(Continued from last week.)

Some are opposed to pasteurization, claiming that the heating destroys the lactic acid bacteria, but not the peptonizing, and as a result the milk decays before it sours. It is also claimed that chemical changes take place which render the milk less digestible, but what do our investigators say regarding these claims? Ayers & Johnson in B. A. I. Bulletin 161 state that in raw milk they found four principal groups of bacteria, that is, acid, inert, alkali, and peptonizing. The work recorded in this bulletin and also B. A. I. bulletin 126 shows that when milk is pasteurized at 140 to 145 deg. F. and held at this temperature for 20 to 30 minutes the percentage of those groups in the bacterial flora remains practically the same. The small differences which do exist are in favor of the acid forming group. In B. A. I. bulletin 166 is published the work of Dr. Rupp on the chemical change produced in cows' milk by pasteurization. Dr. Rupp found that when milk was pasteurized at 145 degrees F. for 30 minutes no appreciable chemical changes take place. The soluble phosphates of lime and magnesia do not become insoluble. The albumen does not coagulate until the temperature of 150 degrees F. is reached. He found that it takes slightly less time to coagulate the casein with rennet in pasteurized milk up to 149 degrees F. than in raw milk and that the acidity is slightly reduced.

These findings were not for milk heated at higher temperatures, but as this is the temperature which gives the best results, both from the health and commercial standpoints, what use is it to consider others? The dairyman cannot afford to pasteurize at a much higher temperature, for if he does he will destroy the cream line, which has a decided commercial value. From the health standpoint a large percent of all bacteria and practically all the pathogenic bacteria are destroyed.

We have what might be called three kinds of pasteurization—flash, retarding and holding. Their efficiency is in the order named. Flash pasteurization is where a continuous flow of milk passes over a heated surface, which heats it to the desired temperature, after which it is promptly cooled. The time required for the whole process does not exceed 1 1-2 minutes. In the retarding process the milk is heated similar to that in the flash, but is held at this temperature for a given length of time by passing through a tank which has several compartments, the milk flowing from one compartment to another. With the holding process the milk is heated in a similar manner as in the flash and retarding processes, but is held, while hot, in a vat a definite length of time. The objection to the flash process is that too high temperatures are required to be effective. In the retarding process the flow of milk, theoretically at least, is more rapid in the center than at the sides of the retarding vat, thus part of the milk is not held the required length of time. The holding process is the one which has come to be recognized as pasteurization, and the others are substitutes only.

Pasteurization to be of its full value as a safeguard to health must receive more attention from our health officials. There are too many plants putting out pasteurized milk which is pasteurized in name only, that is, the contamination after it leaves the pasteurizer, due to dirty pipes, pumps, coolers, bottlers, bottles etc. is so great that little, if any, protection is given the consumer.

During the past 12 months I have inspected 41 milk plants. Of this number 12 were heavily cut on the score for the cleanliness of pipes, bottles etc. Often we find pasteurized milk running higher in bacteria than raw milk, which is being sold in competition to it. In a recent contest held in one of our western cities, at which I assisted as one of the judges, 183 samples of milk were entered. These samples were gathered from the dairymen's wagons as they were making their deliveries, the dairymen not knowing that the samples were going to be taken until the inspectors stopped their wagons. These samples therefore represent the dairymen's output for that day. Of the 183 samples of milk entered 85 were pasteurized. Of these 85 samples 55 of them, or 64 per cent, had a bacteria count of over 100,000 per c.c. and of these 55 samples 15 were over 500,000. On the other hand of the 98 samples of raw milk only 19 of them, or 20 per cent, were above 100,000; of these only two were above 500,000.

Before this condition can be materially changed, the term "pasteurized" must be safeguarded as the term "certified" is protected today. Instead of placing a stigma on pasteurized milk by compelling it to be marked "pasteurized," thereby making the public suspicious of it, reverse the order, and make it a privilege to use the term. Have certain requirements which must be conformed with before the dairymen can have the privilege of using the term "pasteurized" and let the public know that milk marked "pasteurized" has been pasteurized under the direction of the department.

Whether pasteurization is only a temporary need I am unable to say, but I am sure that scientific pasteurization is the next step in the pure milk campaign. I do not advocate it as a cure of the milk trouble, as it is not. I do not advocate it as a purifier of milk, for it is not, but I do advocate it as a protection to the public health until the time comes when pure milk is a common commodity on our markets. If at that time the public decides that pasteurization is no longer necessary it will automatically be discontinued.

Carson valley (Nevada) farmers have organized a company and appointed a committee to purchase 2,000 beef cattle from eastern Nevada to eat up the surplus hay.

A train load of fancy cattle was shipped last week from Durham, Butte county, to San Francisco.

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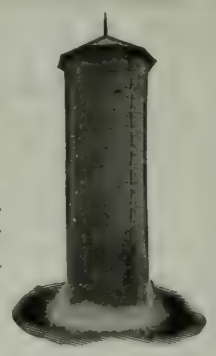

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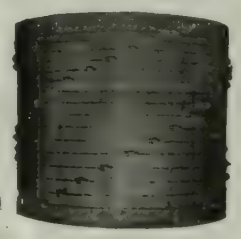

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Also eleven head of grade horses, one registered Jersey bull, fifteen head of dairy cattle, farm implements and household goods.

Mr. Penniger having rented his farm for a term of years is closing out his entire personal and farm property.

C. A. PENINGER, Owner,
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Nature and Cures for Milk Fever

[By Prof. W. S. Cunningham, Arizona Agricultural Experimental Station, Tucson.]

The peculiar feature of milk fever is that it invariably attacks the very best cows, which are in the prime of life and in the best of condition. The greater number of cases occur after the birth of the fourth to sixth calf, but very seldom in heifers with the first or second calf or in old cows which have passed their most active period of life. The attack usually comes from a few hours to three days after calving, although there are records of cases occurring several weeks after the birth of the calf.

Name Misleading.—The name of this disease is very misleading, for it is not a fever. It is a form of paralysis and is now being called "Parturient Paresis" by scientific men. It is true the body temperature may rise one or two degrees at the outset of the attack, but it falls quickly to normal or below normal.

Cause of the Disease.—The specific cause of the disease is not definitely known. There have been many theories advanced as to the origin of this trouble; however, it is not believed that the disease is produced by the toxins formed by the normal functions of an over-active udder. These toxins are absorbed by the blood and set up nervous disorders by their action on the brain and spinal cord. It is believed that the success of the air treatment is due to the pressure preventing the absorption of these toxins by the blood.

Some of the contributing causes of milk fever are excessive feeding and lack of exercise. It frequently follows an easy delivery and one attack predisposes an animal to recurring attacks.

Symptoms—As a rule the dairyman does not notice that anything is wrong until the animal is down and unable to rise. The characteristic position for a cow with milk fever is to lie on its breast with the legs thrown around on the flank. There seems to be a complete paralysis of the hind limbs and the animal apparently is in a stupor. There is a loss of feeding, the cow is insensible to flies or blows, and the eyes appear glassy. The muscles of the throat are so paralyzed that swallowing is impossible. It is not wise to attempt to drench an animal at this time. Occasionally the patient may struggle and moan as if in great pain.

Treatment.—The cure for milk fever is to pump the udder full of air or oxygen. Special air pumps for injecting sterilized air into the udder, or tanks of oxygen may be secured from any veterinary supply house at low cost. In their use, precautions should be taken to have all instruments perfectly sterilized. All metal parts should be boiled for ten minutes. A 5 per cent solution of carbolic acid or creoline must be used for disinfecting the teat tubes before each insertion.

It is well to knead the udder while filling in order to distribute the pressure evenly. The air may be held in by binding the ends of the teats with tape. A patient recovers very quickly when the air treatment is given and usually within a few hours it is able to stand up and eat.

Prevention.—If a milk fever outfit is at hand or a competent veterinarian available it is not wise to try to ward off milk fever by low feeding, because of the ill effect on the milk flow. Feed laxative foods and allow plenty of exercise. Do not milk the udder dry for two or three days after calving.

ALFALFA SILAGE AND SOILING.

[Written for PACIFIC RURAL PRESS.]

The value of soiling crops has long been known by many experienced dairymen, and some have even claimed that on account of this practice they do not need silos, as silos would only be a duplication so far as results were concerned and would entail extra expense of building and of silo-filling machinery.

Among those who have fed green alfalfa for a number of years is Ralph Newman of Elk Grove, but since the erection of his stave silo last spring the daily work of cutting and hauling green alfalfa into the feeding barn has been done away with and alfalfa silage has taken its place.

This silage was made from the first cutting of alfalfa last spring and was so badly infected with foxtail at that time that it was worth very little for hay. As silage though, it is as good as though it were being cut fresh every day and hauled in from the field.

Mr. Newman says that he finds the following advantages of having a silo: (1) it converts poor hay into an excellent succulent feed, (2) the work of filling and hauling is all done at one time, (3) it can be stored indefinitely and fed in the winter when other green feed is not available. The only disadvantage so far as he has been able to ascertain is the odor, which he is overcoming by doing his feeding in the open corrals insead of in the feeding barn as is customary on this ranch.

In regard to the objection that is sometimes heard to the effect that hay containing foxtail put through the silo is of little account due to the beards again becoming hard and penetrating when exposed to the air is of little importance, according to Mr. Newman, who says that unless such silage is left out in the open for a considerable length of time, there is no danger of such ill effects.

Sixty high grade cows were shipped last week into the Hollander colony of Chowchilla.

W. J. Higdon of Tulare took eight prizes on his Guernseys at the Fresno fair.

A. C. RUBY, Portland, Ore.
242 Washington Street

C. W. BOWERS, Davis, Calif.
One Block north of Bank.

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We expect a large shipment of Horses in the next thirty days.

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KING LANCASTER,
Son of King Edward, Grand Champion Bull California State Fair 1909-1910-1911. The Only Bull a Three Times Grand Champion.
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Range Raised Young Shorthorn Bulls for Sale. Single or carload lots.

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Another Victory for the Shires

At the State Fair just closed, the Shire Stallion SEVERN PILOT, imported by the Salvador Stock Farm, won the Stallion Registration Board's trophy and $100 for the best draft stallion of any breed to be shown with three of his get.
If you want to raise draft horses, get a Shire stallion

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100 Registered Shorthorns and 100 Registered Hereford Bulls

All of serviceable age for the coming year's use. Miller & Lux, Mayo Newhall and Vanderlynn Stow have had three cars of these bulls shipped to them to be used next spring, Any one in the market can inquire of any of the above mentioned gentlemen regarding their quality and individuality. They are well bred, carry a great amount of natural flesh and are large for their age. These bulls can be kept cheaper here than in the East as corn is now selling at 75 cents per bushel in Iowa. Buy now and save a large corn bill. Address

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Have Captivated

Hershey's

July 28th, 1914

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Gentlemen:

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They are using other milkers on some of their farms purchased before we were in the business, but from the fact that they have bought no other kind since installing the first Hinman proves that its merits have captivated them.

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I will sell this horse cheap if sold soon. For further particulars write me or come and see the horse.

Watson's Feed and Livery Stables

PATTERSON, CAL.

HOGS NEED PASTURE.

Any one can prevent hogs from rooting up the earth by turning the animal upon pasture, according to C. Mourer, who is herdman for A. B. Humphreys, at Mayhews, Sacramento county.

On this subject Mr. Mourer states that he has found that hogs usually tear up the ground in small pens badly at all times of the year but more especially during the rainy season when the ground is thoroughly soaked with rain water. Whenever his hogs go to rooting badly under these conditions he turns them into either wild grass or alfalfa pasture after which they discontinue the practice. For that reason he believes that the only reason they root so badly in pens barren of all green vegetation is because there is something lacking which they secure from the pastures.

To drain the water from 14 artesian wells on the Laguna de Tache Rancho in Fresno county, when enough has been used for irrigation, $150,000 is being spent for canals.

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ALL animals improve in condition and increase their product of flesh, milk, wool, etc., by being fed liberal rations of cut roots. No matter what else you feed, cut roots will improve the ration. They add a zest which means increased consumption of roughage and aid in digestion and assimilation. They put a top finish on market sheep and lambs. They put color and richness in milk and cream and resulting butter.

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for both hand and power, prepare roots in the best possible way. Cut so fine as to prevent all choking of animals. It's done with the "Non-Choke Curve Cut." Made in seven sizes. Write for free illustrated booklet. Every animal condition will be improved by feeding a ration of cut roots.

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Steel Granaries, Poultry Houses, Wagons and Dipping Tanks, Gasoline Storage Systems, etc.

Poultry for Profit

[Written for the PACIFIC RURAL PRESS, by Susan Swaysgood, Pomona, Cal.]

This week there are so many inquiries that our space will all be taken up in answering them, and then we may not catch up.

One of our subscribers writing from Grafton says: "I wrote a month ago asking these questions enclosing stamp for reply and up to this writing have had no word." Unless there are sick chickens or something serious, personal letters are out of the question. It would take all of my time to reply to every one by mail.

CHICKEN HOUSE CAPACITY.

We have built 8 by 16 poultry houses with dropping boards, so that the whole floor can be used as a scratching shed. How many chickens should each of these houses accommodate? Mrs. H. E. D.

(Your houses will accommodate sixty leghorns, and with the yards certainly should give good results. Would not advise the use of long houses, that is of joining several of these houses together. That plan used to be done, but it is about obsolete now. Have your houses open front and keep them single, that is the only way to keep poultry houses clean in this climate.)

STORAGE OF EGGS.

Last year the Southern California Poultrymen's Co-operative Association made an experiment of storing 700 cases of eggs. Heretofore, the price had always gone down to bedrock in summer, because the commission men told the producers that "local eggs" would not store. This theory is now exploded, for it has been proven, that "with care," the local eggs will store and come out perfectly good. That alone is a victory for the poultrymen of Southern California.

This year Mr. Davis outlined a plan for the storage of eggs by members which was as follows:

January 30, 1914.

Gentlemen of the Board:

With reference to the cold storage of eggs, your manager suggests, for your consideration, as follows; That members be permitted to cold store eggs through the association on the basis of one case of eggs for each dollar paid in on stock. That the association retain the right to determine the quality of eggs to be put in cold storage where it assumes the right to market the same. That the association credit the member for eggs suitable for storage at the rate of candled prices on the day of arrival. That members wishing to cold store eggs be required to notify the association in writing of the number of cases to hold for them. That the known cost of handling and storing be shared equally by the member and the association. These charges are estimated to be:

Season storage per case	$ .50
Season candling in and out	.30
Season cartage	.10
Season insurance	.05
Season interest	.10
Season cases and fillers	.15
Total cost	$1.20
Charges to be paid by each	.60

That the profits or losses be shared equally. That all eggs stored, and which the Association is obliged to sell, be in unrestricted custody of the Association. That the Association use its offices to secure loans on eggs stored on the best terms possible. That four-fifths of the amount borrowed be paid to members and one-fifth be retained by the Association until final settlement, this to defray expenses of handling until a sale is effected.

This plan was pretty generally discussed and finally adopted. This season the Association has stored a great number of eggs for its members that they would have had to put on the market for other commission houses to store, and bring out against the Association members during the winter months.

Feed Buying.—The Association puts out a dry mash that sells under the name of "Co-operative Dry Mash," that cannot be beat. They buy grain when the capital is on hand to buy in quantity, otherwise there is nothing to be gained for either party.

Baby Chick Business.—This has been one of the Association specialties. The baby chicks come from the members of the Association who are able to give good strong chicks chicks and there has been an almost unlimited number sold. They guarantee a full count of live chicks delivered at the express office of the purchaser. That is going a little further than most shippers will do, so they have worked up a big trade.

New Place of Business.—In order to get more room for expansion, the Association closed a five year lease on a large three story building and basement at 324-330 Los Angeles Street. The building has a frontage of 50 feet on Los Angeles Street and 120 feet on Boyd Street, with a 220 foot good cement alley in the rear with good sun exposure and room for advertising.

In this new place with over 24,000 square feet of floor room, they are going to grow. There will be plenty of room for all poultry supplies, for feed, a general sales room for all kinds of poultry—baby chicks, brooders, incubators, etc. The third floor will be given over to the market poultry. Battery coops will be installed, for fattening birds not ready for killing, and for caring for shipment until sold.

Amount Subscribed to Date.—The most astounding feature of the whole thing is that with the small beginning of $500, in a little over two years, and sailing with adverse winds a greater part of the time, there is at present, August 31, 1914, the sum of $129,000 subscribed on the book and a greater portion of it paid in. Membership is $10 per 100 hens for stock subscriptions, which may be paid monthly at the rate of 1 cent per hen a month for ten months.

The Association expects soon to be able to pay dividends, but at present all money is needed for expansion. "Mind your own business" is the Association's motto. Can you beat it?

ANOTHER INNING FOR INDIAN RUNNER.

To the Editor: I have hatched and sold over 1,000 Indian Runner ducklings this season, chiefly to people who have heard of their great laying capabilities, but who had never kept them. During the month of May I could have sold 500 more than I had. The best article that I have read was written by a phy-

sician who especially recommended the flesh and eggs for invalids, claiming them to be far more nutritious than chickens or their eggs. Tomlinson, in his book on the Indian Runner, says, "connoisseurs much prefer the firm juicy meat of this breed to the Canvasback duck of America." They are very little trouble to raise, get on well without a pond, do not have any diseases, mites, etc., that chickens are subject to, grow to maturity quickly and are, as I heard another lady describe it, "veritable egg machines and mortgage lifters."—K. E. Nutman, San Jose.

To the Editor: The following record taken from our books shows from 13 females: Nov. 5 to Dec.5, 286 eggs; Dec. 5 to Jan. 5, 351; to Feb. 5, 377; to Mar. 5, 273; to Apr. 5, 130; making a total of 1417 for five months, from fawn and white and English penciled birds. The eggs were all white shelled and used for hatching. After Apr. 5 we kept no record and used the eggs for domestic purposes, preferring them to hen eggs.—A. D. Roberts, Ceres.

To the Editor: I have no trouble in disposing of Indian Runner eggs both for hatching and eating. My ducks begin laying at 18 weeks and the drakes are ready to eat at 10 to 12 weeks. At that age they weigh three pounds and over. By matching a few at the proper times, we are never without eggs. Yours for the Indian Runner first, last, and all the time.—Mrs. J. H. Bone, San Jose.

SUNFLOWERS FOR EGGS.

Please advise as to value of sunflower seeds as food for chickens, in special regard to eggs. Can they be fed whole or must they be crushed? —H. H. P.

[Sunflower seeds are a valuable addition to a ration, but as they contain a great deal of fibre, they have a low digestibility. They are much too concentrated to be fed as a daily ration. Their chief use is in the molt; and then should be fed very sparingly. Fowls will eat them whole just as well as crushed, but they are too rich to feed heavily.]

SCABBY GROWTHS ON HEAD.

A number of white Leghorn chicks one to two months old have had a growth, usually on the eye or in the corner of the mouth. Most of them seem to recover eventually, but of course it delays and stunts them. The growth seems to be like a light colored scab and can be broken off though it seems to go into the eye socket. I have been putting permanganate of potash crystals on the places, removing the scabs. Reds running with Leghorns are not affected. What is it and what should be done?—S. B. G.

[Your Leghorn chicks are debilitated; due to the lack of stamina in the parent stock. Give them good feed and if yarded turn them out on grass. Ground oats mixed in the mash will tone them up. Add plenty of succulent green feed. Give a little nux vomica in the drinking water to aid digestion and see that the quarters are kept clean. Carbolated vaseline would be better to put on the scabs. Peroxide also is healing, anything that will heal the sores will help; but the cure rests with improving the blood by good feed.]

SOFT SHELLS AND EGG-BOUND HENS.

What are the causes of soft shelled eggs and egg-bound hens and what are remedies?

[The cause of all egg-bound cases is internal fat. Soft shell eggs are nearly always caused by the same conditions, but not quite all. Sometimes a fright will cause hens to drop soft eggs, or a lack of lime in the system. In that case the remedy is to supply more lime in the way of old plaster, oyster shell, or bone. When the trouble is caused by too fatty condition, the remedy is to their feed. Get some straw or other litter and feed all grain in the litter; make the hens exercise more for also feed less mash.]

POULTRY NOTES.

The markets are taking thousands of pigeon squabs where formerly they took only hundreds. In past years very little attention was paid to feeding, or the use of high grade birds for breeding purposes, and the result was a light weight squab that brought scant returns. Today the people who are making money in the squab business strive towards a certain type as determinedly as do the Hereford or Holstein breeders. They aim to breed large, prolific varieties that will produce large, quick-maturing squabs. Judiciously crossed types as well as birds of all the pure breeds may be seen at the San Francisco Poultry Show to be held at the Auditorium Dec. 8 to 13.

Extra effort is also being made to have a specially good pet stock exhibit. The officers, however, find it hard to learn of possible exhibitors. Any one disposed to enter a pet of whatever kind, bird or small animal, is urged to write Secretary E. J. Talbott, of San Francisco, for premium lists and information. Bear in mind that all pets receive special tender care.

Entries for the San Joaquin Poultry show, to be held at Stockton Oct. 20 to 31, are so numerous that this show is promised to be the greatest ever. About forty cups will be given as special prizes by local business men.

The Contra Costa County Poultry Show at Concord Oct. 28 to 31 is also awarding cups and ribbons in addition to cash prizes.

The Sonoma County Poultry Federation's contract with the Hilmer Co. expires Dec. 1; and already several meetings have been held to consider projects for egg disposal the coming year. While the poducers have received about a dollar per case more for eggs the past 40 weeks than for the year previous, about 29,000 cases more are stored in San Francisco, and about 160,000 cases more in the United States, than at the same time last year.

Electric incubators and brooders are being promulgated.

HANFORD FAIR.

If, as Professor Norgord, of Wisconsin College of Agriculture, says, "the worth of a county fair is judged by the number of exhibitors," due to the fact that "it can never be of great influence unless a large percentage of the people within the county are interested in its growth and improvement" then the number of exhibitors at Hanford is of interest.

At the 1913 Central California Fair, 215 cattle, practically all of dairy breeds, were on exhibit. Thirty-one stock raisers showed horses and mules, and 14 swine men showed 200 hogs. For the past fair eight classes of sheep and goats competed for $416 in 144 prizes. Thirty-four exhibitors of poultry last year took away $334.50 in prizes, awarded by N. E. Luce of Los Angeles, who judged the poultry again this year. The stock premiums are made proportionately larger than the horticultural, because of the greater expense of fitting show stock.

In the woman's department last year 99 premium winners took away $350. Sec'y A. G. Robinson claims a better woman's exhibit than the State Fair.

This year it would require too much time before going to press to count up the local exhibitors of horses, mules, beef cattle, dairy cattle, sheep, hogs, goats and poultry. But it is said that their stock at the State Fair frightened some intending outside exhibitors from showing at Hanford. Certain it is that Kings county and her close neighbors took most of the high prizes, especially on swine, dairy cattle, poultry, and horses. The horticultural, educational, and home economics exhibits were better in many respects than ever before.

Horticultural Optimism.—Codling moth, potato eel worm, citrus scales, etc., are a blessing in disguise. They protect the industrious husbandman from the competition of his more slothful neighbor.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

THE FANCIERS' EXCHANGE. — Headquarters for those who appreciate quality. Fancy and utility pigeons, bantams, poultry and pet stock. Satisfaction guaranteed. We make a specialty of starting squab lofts. R. V. Moore, Mgr., 842 S. Los Angeles st., Los Angeles, Cal.

MAMMOTH BRONZE TURKEYS—Large reductions offered on old stock for short time only. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

HICKS JUBILEE HATCHERY—36,000 capacity this season. Now booking orders. White Leghorns and Black Minorcas our specialty. Instructions in caring for young chicks free. W. J. Hicks, R. 2, Petaluma, Cal.

PINE TREE POULTRY FARM, Los Gatos, Cal.—Hatching eggs from S. C. White Leghorns. Selected stock. Ready December 1st. $6 per 100; $50 per 1000. Order now.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 396, Los Gatos, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

INCUBATOR CHICKS—White Rocks and White Leghorns. High class stock. Send for booklet of prices. Mahajo Farm, Box 597, Sacramento, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, $7.50 per 15; utility, $2 per 15; $10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. G. W. Suits, 378 Bandini Ave., Riverside, Cal.

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

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CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

ORPINGTONS—BUFF AND WHITE—Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

PURE-BRED WHITE ROCKS. Mrs. J. B. Tupper, Ceres, Cal.

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FOR SALE—Pure bred Rhode Island Red Cockerels, M. Worley, Palermo, Cal.

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is apt to be a time of trouble with your hens.
COULSON'S EGG FOOD
will help to keep them in good condition, saving loss and worry.
A healthy hen will molt quickly.
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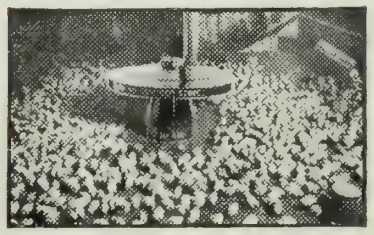

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Our 1915 model is now out with splendid improvements and is the finished touch of excellence in the brooding line. Get our new catalogue. It is worth money to you with any system because it tells you many things you should know. It is illustrated and full of detail this season, and every poultryman should have it. It's free to you.
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1000 S. C. W. L. Pullets, 2 mos. old.....$6.00 per doz.
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Breeding Cockerels $18.00 per doz.
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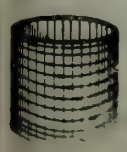

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R. F. WILSON, STOCKTON, CALIFORNIA.

The Home Circle

TOMMY'S SCHOOL.

"Geography's a nuisance, and arithmetic's a bore!"
Said Tommy with a frown upon his face.
"I hate the sight of grammars, and my Latin makes me roar,
"It's always sure to get me in disgrace.
When I'm a man," he added, as he threw his school books down,
"I'll have a school that boys will think is fine!
They need not know an adjective or an adverb from a noun,
Nor whether Caesar bridged the Po or Rhine.

"I don't care if they think that George the Third was King of Spain,
When those old fogies lived so long ago,
Or if they all should answer that the Volga is in Maine.
What difference would it make I'd like to know?
But instead of useless things I'll teach them how to coast and skate.
They all shall learn to row and sail a boat,
And how to fire a pistol, and shoot a rifle straight,
And how to swim, and how to dive and float.

"We'll play at tennis and at cricket all the livelong day;
And then there's polo, and—Oh, yes, football;
And base-ball they shall every single one learn how to play,
I tell you," finished Thomas, "I'll have one of just that kind.
Then all the boys, you see, will want to go,
They will not run away and say my school's an awful grind,
Or call the lessons dull and hard I know.

—St. Nicholas.

THE INDEPENDENT ORPHAN.

They looked just alike—the incubator chicken and Old Speckle's Brownie,—except that perhaps the incubator chicken walked a little more stiffly and held up his head a little higher. It was a very grand thing, indeed, to be an independent orphan, to come and go as one pleased, to have one's food provided by that great creature, the hired man, instead of having to scramble around with a dozen other little fuzz-balls, where Old Speckle scratched and clucked.

"Who is that common fowl?" asked the independent orphan, with his bill in the air and his toes well turned out; and little Brownie, running meekly and admiringly after, dropped his foolish little head, and blushed a faint chicken-blush, as he answered,—

"My mother."

"Goodness! What a vulgar bustle and noise she does make! What is that she is scratching out of the ground for those ordinary little chickens?"

"Worms," replied Brownie, humbly.

"How disgusting!" sniffed the oprhan.

"But they are very good,—they are, indeed," ventured Brownie.

"The diet, I understand, of quite common people. We orphans eat only prepared food."

"But haven't you any brothers and sisters?"

"Oh, dear, no!"

"Haven't you any mother either?"

"Mothers are very much out of date. No fashionable chicken nowadays has a mother. In fact, I would advise you to leave that plain-looking fowl that you call mother at once, and cast in your lot with us. You are really such a very nice and attractive little person that you would soon be quite like an independent orphan, and I would see that you have a special feather-duster foster-parent to go to each night for the necessary warmth and shelter. They all hang in a row, and you can choose your color. Mine is green and very stylish-looking."

Brownie's voice trembled, as he replied:

"I agree with you. Speckle has already too many children to scratch for."

The two proud little chickens strutted on together through the farmyard. Poor Old Speckle passed them, clucking quickly to Brownie as she hurried by:—

"Come home my child. It is going to rain, and it is getting late. You must all be in the coop at once."

Brownie pretended not to hear; and the two independent orphans kept on their way, although all the foolish little chickens that had been admiring them had long ago gone home to their mothers.

The sky was very dark, and great drops of rain began to fall. Faster and faster they came, until the two friends lost their path completely. Brownie thought of the far-off home coop, and his throat choked up. He shivered, and remembered how soft and warm and safe he had always been under Old Speckle's breast.

"Where is the feather-duster foster-parent?" he moaned to the independent orphan.

"I don't know," sobbed he, his pride all soaked out of him. "And besides, it always gets so wet and cold if the rain gets on it; and it leaks over mine. Perhaps it leaks over everybody's. Oh, what shall we do? I am going to die,—I know I am; and it's all your fault, because you brought me so far from home."

Poor Brownie realized that they were in great trouble, and that he would have to find a way out.

Suddenly, in the dark, he tumbled up against something hard, and cried, "Peep! peep!" with all his might. From somewhere inside he heard dear Speckle's voice:—

"Cluck, cluck, cluck! come right in at once, and get dry. We have been worried to death about you. Cluck, cluck!"

"Peep, peep! I'm coming, I'm coming, mother dear," called Brownie, pushing in among the other little fuzz-balls, and never caring how wet he was.

"Cluck, cluck!" called Speckle. "There's another one outside. Somebody's baby got lost, probably. Come right in here, dearie, and cuddle in with the rest. The coop is dry, and my wings are big enough for you all."

And the independent orphan, with a little gulp of thankfulness, snuggled down in the warm, dry shelter.

"Brownie," he whispered in his little comrade's ear, "do you think Speckle will let me be one of her children always?"—Grace Duffield Goodwin, in the Sunday School Times.

THE GARDEN IN OCTOBER.

Howard & Smith of Los Angeles in their October Bulletin print many valuable suggestions pertaining to fall work in the garden. Here are a few suggestions taken from it that are worth while:

Don't plant your seeds and bulbs too deep and then blame the nurseryman for non-germination; a safe rule is to plant them about four times their diameter, which obviously means that larger bulbs and seeds can be planted deeper than the smaller bulbs or finer seeds.

A most important factor to success in the growing of bulbous plants is to have your beds in a sweet, friable condition. They are fond of plenty of manure and preferably a light soil. Arrange the beds with ridges at the sides so that they may be treated by the flooding method in watering. It gives infinitely better results than sprinkling. Once your bulbs are planted mulch the surface with one inch to an inch and a half of good fibrous manure; this retards the

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evaporation and tends to keep the under soil cool and moist.

Now is the time for a second sowing of winter sweet peas. The bed should be prepared some time in advance of planting if possible. The ground should be spaded over at least eighteen inches deep with a dressing of three inches of well rotted manure spaded in and thoroughly incorporated in the pulverized soil. Soak thoroughly and turn over a couple of times before sowing the seed, allowing a few days or so to elapse between operations. Plant the seed in drills, covering at least two inches deep. If the ground is moist it will require no water until they appear. Watering beforehand cakes the soil on top and prevents free growth.

The month of October is a logical time for the planting of a host of evergreen shrubs and trees.

Do not fail to make a sowing of California Poppy seed during this month; doing it at this time will give them a long growing season and the full advantage of the Winter rains. The results will be immeasurably superior to Spring sown seed.

The moving of plants to their new quarters at this season gives a well established tree or shrub in a short space of time.

Including other important varieties do not fail to make plantings of Spanish Iris, Cyclamen, Freesias, Gladiolus, in both the early flowering varieties and the late sort America.

PRETTY TALL.

Pat had gone back home to Ireland and was telling about New York.

"Have they such tall buildings in America as they say, Pat?" asked the parish priest.

Tall buildings, ye ask, sur?" replied Pat. "Faith, sur, the last one I worked on we had to lay on our stomachs to let the moon pass."

NO ROOM FOR CREAM.

"My dear," said the young husband, "did you speak to the milk man about there being no cream on the milk?"

"Yes, I told him about it this morning, and he has explained it satisfactorily. I think it is quite a credit to him, too."

"What did he say?"

"He said that he always filled the jug so full that there is no room on the top for the cream."—Farm and Home.

NATURAL QUESTION.

"Woman," growled the villain, "the crime is on your own head."

"Is it on straight?" anxiously demanded the villainess.—Cincinnati Enquirer.

Don't expect to put on fertilizer in March and get results in June. All food stuffs must be taken into the assimilative organs of the tree and there digested and assimilated put into circulation in the tree, just as food is eaten and digested and turned into bone and muscle in the bodies of animals. It is a process of intricate and gradual assimilation which places the tree or the animal in a condition to produce results.

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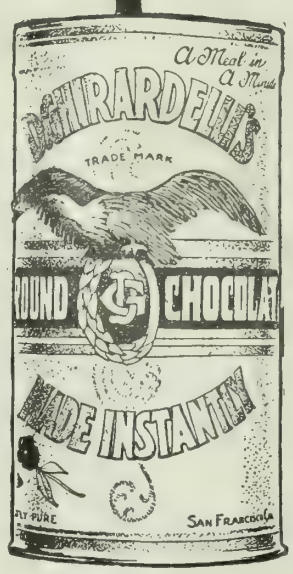

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The Markets.

(Unless otherwise noted prices quoted are f. o. b. San Francisco.)

San Francisco, Oct. 14, 1914..

WHEAT.

The wheat trade here remains very dull and somewhat easy, as there is congstion of stock at northern shipping points, and holders show some fairly well held, only one variety begairly well held, only one variety being quotably lower.

California Club, ctl	$1.65@1.70
Forty-fold	1.70@1.75
Northern Club	1.65@1.70
Northern Bluestem	1.90@1.95
Northern Red	1.65@1.85

BARLEY.

There has been a large export movement for the last week, with indications that it will continue for some time. Last month's export trade was extremely heavy. Supplies at shipping points, however, remain quite large, and the market shows no firmness. Feed shows another slight decline, though there is no great pressure to sell at these figures.

Brewing & Shipping	$1.15 @1.20
Choice Feed, per ctl.	107½@1.10
Common Feed	Nominal

OATS.

White oats are a little easier, other grades standing as before. Ordinary feed offerings receive limited attention, though there is a fair inquiry for seed.

Red Feed	$1.40 @1.50
Seed	1.65 @1.90
Gray	Nominal
White	1.45 @1.50
Black Seed	1.75 @2.25

CORN.

Eastern corn is offered quite freely for forward shipment, with prices somewhat lower, and some business is under way. Egyptian is arriving here in large quantities, with a very limited demand in the local trade, and is consequently lower.

California Yellow	Nominal
Eastern Yellow	$1.80 @1.85
Eastern White	Nominal
Egyptian	1.65 @1.70
Milo Maize	1.75 @1.80

RYE.

Buyers are taking no interest in this grain at present, and with very little offered it is impossible to give any definite quotation.

Rye, per ctl	Nominal

BEANS.

Most descriptions have again been marked down quite sharply, and are believed to be pretty well down to the new-crop basis. Supplies of new stock, though light in most lines until very recently, are now rapidly increasing, the output in nearly all producing districts being large. Buyers have been coming out rather slowly, but there is now fair shipping business, and a larger movement is expected very soon. The New York trade is said to have loaded up with limas at the recent high prices, though offerings for early shipment are well received in other eastern markets.

(On wharf.)

Bayos: Cal., per ctl	$3.35 @3.50
Blackeyes	3.25 @3.40
Cranberry Beans	3.40 @3.55
Horse Beans	3.00 @3.50
Small Whites	4.00 @4.25
Large White	3.00 @3.75
Limas	5.00 @5.75
Pea	4.25 @4.50
Pink	3.00 @3.10
Red Kidneys	4.00 @4.25
Mexican Red	4.00 @4.25

SEEDS.

New alfalfa prices are expected shortly. Most of the California seeds for eastern and export trade have been shipped, with short deliveries in several lines. The local market is quiet and featureless.

Alfalfa	Nominal
Crown Mustard, per lb	Nominal
Canary	Nominal
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Local prices have not bee hanged. Some good sized shipmen r England have been shipped to the north, but other export trade is quiet.

Cal. Family Extras	$6.60 @6.8
Bakers' Extras	5.50 @6.0

HAY.

There is practically nothing ne n the hay market. Arrivals, thoug xpected to decrease at any time, s far continue heavy, especially of th lower grades, and with a limited de mand it is difficult to make sales a anything like satisfactory prices. Th bulk of the offerings are coming o consignment. Choice offerings ar pretty well taken. There is a con tinued light demand for export, but this is not yet a very important fac tor. Alfalfa is offered freely, bu tells without much difficulty.

No. 1 Wheat, or Wheat and Oats	$8.00@ 9.0
do No. 2	6.00@ 7.5
Barley	6.00@ 8.00
Tame Oats	7.00@11.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.0
Stock Hay	4.50@ 5.00
Straw, per bale	30@ 45c

FEEDSTUFFS.

The low freight rate by the Panama Canal has led to an eastward shipping movement in alfalfa meal, which is giving some relief to the local market. The price has been marked up a little. Other feeds are unchanged.

Alfalfa-Molasses Meal, per ton	$19.00@20.00
Alfalfa Meal, per ton	14.00@15.00
Bran, per ton	30.00@31.00
Oilcake Meal	33.00@35.00
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	24.00@25.00
Rolled Oats	32.00@33.00
Shorts	32.00@33.00

VEGETABLES.

The local trade is miscellaneous garden truck is rather quiet for this time of year, and while some vegetables are coming in less freely, with a resulting improvement in prices, the market as a whole shows little strength. Tomatoes continue at the same low range as last week, with heavy supplies. Offerings of green corn are lighter, and while the demand is nothing extra, choice lots are held at an advance. Bell peppers are slightly lower, chilis being unchanged. String and wax beans are doing a little better, while limas show a wider range. Sprouts are plentiful and lower.

Green Peppers, bell, lugs	25@ 35c
Green Peppers, Chili	40@ 50c
Carrots, per sack	35@ 50c
Tomatoes, lugs	20@ 40c
Beans: Wax, per lb	2@ 3c
String	2@ 3c
Lima	1½@ 3c
Cucumbers, lugs	30@ 45c
Eggplant, lugs	25@ 50c
Green Corn, sack	1.00@ 2.25
Summer Squash, box	25@ 35c
Cream Squash, box	35c
Okra, box	25@ 40c
Celery, doz	15@ 30c
Sprouts lb	2@ 3c

POTATOES AND ONIONS.

Potatoes are arriving liberally from the Delta district, but there is a little better buying movement, which keeps prices well up to the previous level. Onions are lower, and there is quite a strong effort to sell, with heavy accumulations of up-river wharves and burdensome offerings here. The current demand is limited, and there is little interest on the part of cold storage operators.

Potatoes: Salinas, ctl.	$1.45@1.60
River Burbanks, ctl.	70c@$1.00
Sweet Potatoes, ctl.	1.40@ 1.50
Onions: Yellow, sack	30@ 40c
Garlic, per lb	10@ 15c

POULTRY.

There is no quotable change in prices, the market in general remaining sluggish and rather easy all round. The demand is hardly up to normal, while offerings of both local and eastern stock are plent ful.

Turkeys, lb	19 @24 c
Large Broilers	20 @22
Small Broilers, per lb	20 @23
Fryers, per lb	19 @20 c
Hens, large, per lb	17 @18 c
Hens, extra, er lb	
Small Hens, per lb	15 @16 c
Young Roosters, per lb	18 @20 c
Squabs, per doz	2.00@ 3.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00

BUTTER.

Butter is still coming in quite freely from the north coast districts, but a good buying movement in local and nearby markets has started prices again on the up-grade, at least for extras Firsts and prime firsts are unchanged.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	29	29½	29½	....	30½	30½
Prime	27½	27½	27½	....	27	27½
Firsts	26	26	26	....	26	26

EGGS.

The upward movement continues, extras having taken quite a jump the first of the week, owing to a gradual cultailment of offerings. Pullets show a slight advance, as offerings of this grade are relatively larger than of extras.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	43	43½	45	....	47½	47½
Selected Ful	31	31	31	....	32½	33

CHEESE.

Flats have recovered a little from the decline of last week, while Y. A.'s show a further drop. Monterey cheese is easier, but current arrivals are lighter and the old price is allowed to stand.

Fancy California Flats, per lb.	13c
New Young Americas, fancy	14c
Monterey Cheese	15@16c

At Los Angeles the dairy produce markets for the past week have been as follows:

Butter:	Wed.	Thu	Fri.	Sat.	Mon.	Tu.
Extras	31	31	31	31	....	31
Eggs	40	40	40	45	....	55
Cal. Cheese	14	14	14	14	....	14
Fats	14½	14½	14½	14½	....	14½

DECIDUOUS FRUITS.

Cranberries are again offered a little below the outside figure, and raspberries are also lower, other descriptions standing as before. The general fruit trade locally shows little life. Apples are moving off slowly at poor prices. Some Lake county pears are coming in, and bring fairly good figures, but winter Nellis and ordinary stock are easy. Peaches are about cleaned up, except for a little storage stock. Both white and black figs are doing a little better, with lighter offerings. Pomegranates and persimmons find about the usual limited demand, with prices as before. Nutmeg melons from the river districts are in good demand, selling at 40 to 60c. per lug box, and other melons are also moving fairly well, though without improvement in prices. Grapes are very plentiful and easy, with lower prices for tokays and seedless, and liberal offerings of cornichons at rather low prices.

Cranberries, bbl	$7.00@ 7.50
Huckleberries, lb	8@ 10c
Strawberries, chest	2.50@ 4.00
Raspberries, chest	3.00@ 5.00
Apples, Newtown Pippin	50@ 90c
Belleflowers	40@ 65c
Spitzenberg	50@ 90c
Gravenstein	50@ 1.00
Crabapples	25@ 50c
Quinces, box	75@ 1.00
Pears, box, large	1.50@ 2.00
do No. 2	50@ 70c
Winter Nellis	75@ 1.00
Peaches	30@ 50c
Figs: Black, double layer	40@ 65c
White, single layer	40@ 50c
Pomegranates, box	25@ 1.25
Persimmons, box	50c@ 1.25
Cantaloupes, crate	1.25@ 1.50
Grapes: Malagas, crate	35@ 50c
Watermelons, doz	75@ 2.00
Tokays, crate	30@ 50c
Seedless, crate	60@ 75c
Muscat, crate	50@ 60c
Black	25@ 40c
Cornichon	30@ 50c

DRIED FRUITS.

There appears to be little activity i any line, and values show no uotable change, except for a slight idvance in peaches, for which some ackers are again offering 4c. There is more or les uncertainty regarding the general market situation, as buyers in the east are inclined to go slow, and there appears to be some effort to take advantage of the delayed movement to get fruit at lower prices. Many growers are said to be figuring on shipping peaches on consignment; but on the other hand there is some indication of a quiet buying movement in this line, which may have a strengthening effect. Prunes have received little attention in the east, but there is a firmer feeling at present, and it is reported that English interests are feeling the market. Apples are dull and rather easy, and apricots move slowly in outside markets, though they are generally held to be very cheap at current prices. The New York Journal of Commerce says:

"Amid the general dullness of trade one little spot stands out. It is the rather active demand from country buyers for new crop spot California Prunes. While these orders are small they are frequent and are said to be absorbing stock about as fast as it arrives here. The local distributing trade, however, is not doing much buying at present, liberal suppies of fresh and the unseasonable warm weather prevailing for a week past have curtailed consumption of dried fruits. There is no business being put up from here to the Coast at present so far as reported, but on the other hand, there appears to be less pressure to sell for forward shipment.

"Southern California Apricots are said to be below the mark in quality for the most part and the market for them is easy, choice Royals being offered at 6¾c f. o. b. steamer. Santa Clara packers are said to be unwilling to meet this price, with their better quality fruit. The trade here remains indifferent. Peaches remain dull and heavy.

"There is apparently no demand from the local trade for California Raisins in loose or seeded muscatels or the seedless varieties, and reports from Chicago indicate that there is even less buying interest there. Offerings of resales of Coast seeded by Chicago to the trade here at a quarter of a cent under the Associated price have come to nothing, as it is found that the difference in extra freight to the seaboard would about eat up the difference in values."

Evap, Apples, 1914	4 @5 c
Apricots, 1914	6 @9 c
Figs: White, 1914	4 c
Black	2½@2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, 1914	5 @6 c
Peaches, new	3½@4 c
Pears	6 @8 c
Raisins (in sweatbox):	
Loose Muscatels	4 @4½c
Thompson Seedless	5 @6 c
Seedless Sultanas	5 c

CITRUS FRUITS

The eastern auction markets are in good shape and are paying higher prices for California oranges and lemons. At Chicago on Monday, Oct. 12, oranges brought $2.75 and $3.25 per box, while lemons averaged from $2 to $5 per box. At Pittsburgh the same day the auctions paid for Valencias $2.30 and up to $2.95, and for lemons $2.90 up to $3.75 per box.

Speculation regarding the new orange crop is rife, and California is generally credited a little less number of cars than for the season just closing. New Louisiana oranges have already appeared on the market and Florida fruit will soon be ready.

In the central California section oranges are coloring nicely and shipments will be made soon.

Some new naval oranges are showing in the San Francisco market, but this variety is not yet quoted here. Offerings of Valencias are

ample, but values are well maintained, with a slight advance over last week's figures. Lemons have been in slightly better demand for the last few days, but the quotations are unchanged.

Oranges:
Valencias, box ....$1.75@ 2.50
Tangerines, crate .... 75c@ 1.25
Grapefruit, seedless, box1.25@ 2.50
Lemons, box .....2.00@ 4.50

NUTS.

The Association is said to be sold out of No. 1 and No. 2 soft shell and budded walnuts, on which prices have been withdrawn. Shipments are going forward rapidly. The early demand for almonds has subsided, and a good deal of stock is offered by independent growers, who find it difficult to sell on the Association basis. The New York Journal of Commerce says:

"The business in new crop California Walnuts at the opening prices is said to have been very satisfactory, and according to all accounts packers are closely sold up to capacity, while eastern distributors have found a very ready market for what they have to offer, not only because of the uncertainty as to supplies from Europe to arrive in time for Thanksgiving trade but to the superior quality of this season's California crop. Some shipments of French Walnuts are expected in November."

(Association prices.)

Almonds, 1915 crop:
Nonpareils ..... 21 c
IXL ..... 20 c
Ne Plus Ultra ..... 19 c
Drakes ..... 16 c
Texas Prolific ..... 16 c
Walnuts, new crop:
Jumbo, lb ..... 19 c
No. 1 Softshell 16½c
No. 1 Hardshell ..... Nominal
Budded ..... 20 c
No. 2 ..... 12 c

HONEY.

Comb honey is still in fair demand, but extracted receives little attention. It is reported that the eastern trade is getting liberal shipments from South America on consignment, cutting off the outlet in that direction. Some bee men are considering shipping their honey here on consignment, but are advised by dealers not to do so, as there is no market for it.

Comb: White .....12 @14 c
Amber .. .. 8 @10 c
Dark 8c
Extracted: White ..... 7 @8 c
Amber ..... 4½ @ 6 c
Off grades ..... 3 @ 4 c

BEESWAX.

Values are rather unsettled at present, as there is not much demand, and offerings from producing points are increasing. No definite reduction has been made in quotations, but it is doubtful if these prices can be realized.

Light .....31 @32½c
Dark .. ..27½ @31 c

HOPS.

There has been an active demand in Oregon lately at 10 to 12¼c, and some business has been done in Sonoma county at 12c, though growers show some reluctance to accept these figures. The eastern demand, however, is light, and many brewers wish to hold off until after election.

1914 crop .....12 @13 c

WOOL.

California wool remains nominal, practically no business having been done on the fall clip. A little stronger feeling has been reported in the east, but the outlook is very uncertain and buyers are taking little interest.

Fall Clip .....Nominal

LIVE STOCK.

Steers: No. 1 ..... 6¾ @ 7 c
No. 2 ..... 6½ @ 6¾c
Cows and Heifers: No .1 5¾ @ 6¼c
No. 2 ..... 5¼ @ 5½c
Bulls and Stags ..... 3 @ 5 c
Calves: Light ..... 9 @ 9½c
Medium ..... 8½ @ 9 c
Heavy ..... 7 @ 8 c

Hogs: Grain-fed:
250 to 350 lbs .... 8 c
125 to 250 lbs 8½c
Prime Wethers ..... 5 @ 5½c
Ewes ..... 4½ @ 5 c
Milk Lambs ..... 6½ @ 6¾c

HORSES.

There have been no quotable offerings of outside stock here this week, and such horses as have been put on sale have received very limited attention, the local demand being considerably below expectations. About the only matter of interest at present is the announcement of a sale in Santa Clara county for Oct. 20.

Heavy drafters, 1700 lbs. and over .....$225@275
Light Dra's, 1500 to 1650 200@215
Chunks, 1350 to 1500... 180@200
Wagon Horses, 1250 to 1350 ..... 125@175
Green Mountain Range.. 90@1.00
Delivery Horses, 1050 to 1250 ..... 75@100

MULES.

1200 lbs. .....$150@200
1100 lbs. ..... 125@150
1000 lbs. ..... 100@125
900 lbs. ..... 65@100

DRESSED MEATS.

Steers .. ..10 @11¼c
Heifers .....10 @11 c
Veal, large .....13½ @14 c
Small .....15 @15½c
Mutton: Wethers .....10½ @11½c
Ewes .. ..10 @10½c
Suckling Lambs ....13 @13½c
Dressed Hogs .....13 @14 c

SPECIAL DECIDUOUS MARKETS.
By J. L. Nagle.

There has been an unexpected but welcome advance in the grape market, and we attribute it to the improvement in weather conditions in the east, falling off of receipts from California, and the fact that Michigan, New York State and Ohio grapes are now practically out of the market.

At the time when the eastern markets were in such a deplorable condition, due to excessive shipments from California, the Tokay shippers decided to shut down for a week or ten days to relieve the situation. This had the desired effect, and we feel that the market will remain active if the shipments can be regulated from now on. Naturally, the tonnage will be lighter as the season is drawing to a close, but all markets can be kept in a healthy condition by permitting the demand to exceed the supply. This can easily be regulated by shippers being more consistent.

It is reported that of the 6000 carloads of grapes from New York State, from 2000 to 2500 will be taken over by the wine and grape juice industries. This in a great measure relieves the competition from California Tokays and Malagas, but it is not to be compared with the extremely heavy amount of tonnage that was used for this purpose last season.

The packing of Emperors in sawdust has commenced and already shipments are leaving the State. The demand for this particular package is not as active as it was two weeks ago, as we find that several of the buyers throughout the country are anticipating cheap Almerias and have cancelled their orders for keg Emperors. This will result in several carloads being stored through the winter.

The markets during the past week ranged as follows:

New York: B. Hardy, $2 to $2.30; Comice, $2.13 to $3; Levis, 70c to $1; Clairgeaus, $1.95 to $2.85; Salways, 60c; Nellis, $2.10 to $2.50; Morceaus, $2 to $2.45; Cornichons, 75c to $1.80; Malagas, 85c to $1.18; Muscats, 80c to $1.20; Tokays, 80c to $1.39.

Chicago: Levis, 40c to 60c; Cornichons, $1.05 to $1.35; Malagas, 80c to $1.25; Tokays 85c to $1.25.

Boston: B. Hardy, $2.25 to $2.55; Clairgeaus, $1.80 to $2.30; Salways 55c to 65c; Cornichons, 85c to $1.35; Malagas, 85c to $1.15; Tokays, 70c to $1.40.

Philadelphia: Levis, 95c; Cornichons, $1.35 to $1.40; Malagas, 80 to $1.30; Muscats $1.20 to $1.60; Tokays, 75c to $1.30.

Total deciduous fruit shipments for the season up to Oct. 13, were 13,443 cars, as against 11,340 cars to same date last year.

Publisher's Department.

An instance of what slight errors on the part of the printer can do in the way of changing the intended meaning occurred in last week's issue in the advertisement of Oliver Chilled Plow Works. The omission of a period changed Oliver No. 11 to Oliver Noll, and the insertion of a letter in another place converted "landside" into "landslide." The corrected ad. appears in this issue.

California Poultry Practice.

As stated in our last issue, we are at work getting out a new book on poultry with the above title. The manuscript is in the hands of the printer and we expect to have books ready for the trade by November 1st. In this book Mrs. Swaysgood covers the entire poultry subject under the following chapter headings:

Some of the Advantages of California Poultry Raising; When and How to Start in the Poultry Business; Location; The Colony Plan; Open Front Houses; Large and Small Plants for Eggs; The Care and Management of Eggs; How to Build an Incubator Cellar; How to Run the Incubator; Raising the Chicks; Why Chicks Die in the Shell; A Few Don'ts in Raising Chicks; Brooders and Brooding Systems; The Building of Brooder Houses; Poultry Appliances; Raising Broilers; Feeding for Eggs; Balanced Rations, What Are They? Feeding the Breeders; Fattening and Preparing Fowls for Market; Balanced Ration for Heavy Breeds; The Mold That Injures Poultry; Egg Foods, or Condition Powders; The Value of Milk in the Poultry During the Summer; The Molt in California; The General Purpose Fowl; Capons; Prepotency and Prolificacy; The Mediterranean Class; The American Class; The French Breeds; The Asiatic Class; The English Class; Games and Orientals; Duck Culture in Californit; Turkeys in California; Raising Geese Profitable; Pigeons for Profit and Pleasure; Poultry Diseases and their Remedies; Parasites Affecting Poultry and Methods of Extermination; Secrets of the Show Birds' Toilet; Killing Poultry.

If you want a copy of the book "One Thousand Questions in California Agriculture Answered" we would urge you to send in your order, or at least ask for the special subscription offer. The books are going fast and the edition will not last much longer.

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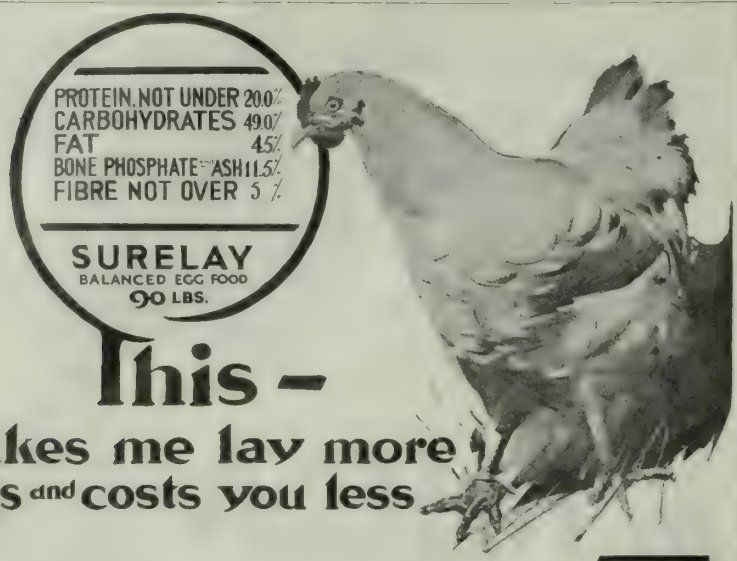

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It contains some very valuable pointers on how to raise chickens and get the most profit out of them. It tells how to feed and care for them. Sign and mail the coupon today. Address all communications to the **Stock and Food Department,**

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Size of Farm ..... *Acres.* *(Check main crop raised.)*

Fruit ..... *Rice* .....

Grapes ..... *Alfalfa* .....

Grain ..... *Hops* .....

Hay ....

Vol. LXXXVIII—No. 17 Forty-fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, October 24, 1914 LOS

State Library 7-1-16 5-2-15

Old and New Peach Pruning.

[Written for PACIFIC RURAL PRESS.]

Whether to prune peaches now or later, whether to prune as our fathers did, or as the Japanese of Placer county do, or as certain observant present-day successful growers are doing, must be decided before the election. Not because peach pruning has any political aspect, but because November will be a good time to do it if you haven't pruned them as soon as the crop was off. Many of the leaves will still be on to help distinguish dead wood, and the fall rains will not have softened the ground too much. But bear in mind that pruning this November will have the same effect on the tree as pruning any time in winter.

Ed. Ames, a successful fruit-grower of Placer county, whose fruit is highly commended by the Newcastle fruit shippers, has a system for his forty acres of peaches which appears reasonable, though new to most of us. It is a system which he claims produces maximum crops because it uses practically all of the energy of the tree for fruit production instead of wasting it on new growth, which would have to be constantly cut back.

Briefly, his method is this:

A new shoot grows one to three feet this year. Don't cut it back next year; but let it grow. There will be a few peaches on it and a great many strong buds will develop to set and mature a crop the following year. After that crop is off, cut off the whole shoot back to the main branch. Other buds will grow from about the same place and below it on the big limbs to go through the same cycle. While this shoot is bearing its heavy crop, others will be growing and setting fruit buds for the year when the first mentioned one has been cut off The philosophy of it is this:

New System of Peach Pruning. Tree 9 years old, 7½ feet high, 14-foot spread.

When you cut off a new shoot several others start next season near the cut, and draw all the sap from the buds below. They are stunted and probably killed. The several new shoots use a lot of sap that ought to go to fruit, for it is well known that the cutting back stimulates undue wood growth. You will have your trouble of cutting back year after year; and as time goes on, you build the tree higher and higher out of the reach of fruit pickers. It forces the leaves and fruit out to the ends of the limbs, for the new growth at the ends takes the sap from buds inside. If a big limb dies on the south or west side, the whole inside of the tree is exposed to sunburn, which is the cause of more peach trouble than anything. If the new shoot had been cut back last year, it would have borne some fruit on the stub while sending out the new wood. Then the fruit spurs would have died and only the new wood could bear this year, for it alone would have set fruit buds in summer for this year's crop.

With Mr. Ames' system, after a tree is large as convenient to prune and pick from, the fruit is forced out all along the limbs where it can be most securely held up and most thoroughly nourished. The tree does not grow appreciably higher, there is very little waste wood growth, for the shoots unpruned grow only a very few inches and that few inches is good for the production of necessary leaves. If a limb dies, the rest of the big limbs are protected from sunburn and consequent borers, by the foliage among the fruit. There will be a maximum crop of fruit, more than the tree could stand otherwise, and it will be as large sized as that of Mr. Ames, so that it takes fancy prices on market. If the tree seems too prolific, take out more wood—always at its junction with the limb from which it springs. The tree is kept open enough always to supply light to the inner fruit spurs, but enough new wood is left to protect it from sunburn.

New spurs are constantly growing among the bearing ones, so that the old limbs continue to bear. Should the new spurs get a little too thin, or the tree seem to need more leaves, a few shoots may be cut back for the sole purpose of providing new wood.

Mr. Ames will have an exhibit at the Panama-Pacific next year to show how his fruit grows.

This system is approved by deputy horticultural commissioner F. C. Brosius of Sacramento county, who has tried a similar system in Eldorado County with excellent results. It makes the limbs self-supporting and removes the need of props which would be in the way.

A similar system is to be used this November on the canning and drying peaches of Landan and Clough of Atwater. Their Tuscans and Elbertas are eight years old, the Phillips are seven. It is only two years that Sam Clough has had the management, so he will work out the system on trees formed the other way.

His object in pruning will be to regulate the amount of fruit by snipping off entire fruit spurs and short new growth till they are just thin enough so that all the fruit that will set will not break the limb. More will be left on limbs that hang downward without having to make a short bend, for such can hold more fruit than those that project upward at a stiff angle. More will be left on

(Continued on Page 399.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

Address all communications and make checks or money orders payable to
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Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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Frank Honeywell - Publisher and Manager
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D. L. Schrader - - Subscription Manager
R. E. Hodges } - - - - Assistant Editors
J. C. Loomis }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., October 21, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Red Bluff	2.41	4.97	2.94	68o	46o
Eureka	.94	1.46	1.74	90	46
Sacramento	.42	.50	.98	86	48
San Francisco	.28	.31	1.01	89	54
San Jose	.40	.40	.90	90	42
Fresno	.12	.32	.68	92	48
Independence	.17	.37	.64	82	38
San Luis Obispo	.02	.02	1.13	90	50
Los Angeles	.00	.19	.44	94	54
San Diego	.00	.68	.36	78	54

T means trace

The Week.

Since the first of the month the opening of the rainy season has been heralded, as usual, by showers here and there in the coast region north of San Francisco. Since our last issue the rain area has extended down the coast and measurably into the interior. It has been thus far only a gentle warning that the season of the rains has arrived and that at almost any time the winds may blow and a real fall-wetting given to the state. Thus far it has been only a dust-laying and plant-washing dispensation, enjoyable for that service but chiefly of moment as it betokens the unlimbering of the weather guns for heavier shooting. Here and there new verdure is re-coloring the landscape, and browns and yellows will give place to varying hues of green. It is really the birthtime of the new California year, although neither calendar nor almanac thus herald it, for in their philosophy brown October leads to the death of the year, but to us it is the beginning of all which makes the California winter delightful, active and productive.

We Should Sell, Not Buy Wheat.

Everything indicates a very busy year in California through recognition of the duty and opportunity in it. We have tried to suggest this before and to particularly urge attention to wheat on lands well rested and rotated for the crop. There are several reasons why we should grow wheat this year. We shall need more flour for our own use because of the multitudes of keen appetites which will be exhibited at our two great expositions, and it will not be so easy to buy wheat from our northern neighbors as it has been recently. At present the north is being bought empty on European orders because the world's wheat supply is short, although we have had an unusually good crop in this country. The statistics announced since our last issue by the Department of Agriculture indicate the crops of all nations aggregate approximately 3,741,018,000 bushels, against 4,125,310,000 bushels in 1913 and 3,791,875,000 bushels in 1912. Besides, although European harvests were pretty well over before, or soon after, hostilities began, and the grain is believed to have been saved in generally good condition, the total is short and the next year's production promises to be most seriously interfered with. California could return to a good wheat surplus in 1915 and a good income from it if the fields should be cleaned by shallow working as soon as the foul stuff starts and then a good deep turn by heavy teams or tractors with sub-packing and an early sowing, which is the chief surety of a crop. And now is the time to get ready for it.

Tommy Atkins' Menu.

Speaking about things that have to be eaten, possibly a more definite idea of what Great Britain will need to keep her forces busy may be in some way useful. The claim is made that the British soldier is the best-fed in Europe. A force of 200,000 men is given four months' rations on this scale: 24,000,000 pounds of hard bread, 18,000,000 pounds of beef, 1,600,000 pounds of compressed vegetables, 720,000 tins of condensed milk, 800,000 pounds of salt, 800,000 pounds of coffee and 400,000 pounds of tea, 40,000 gallons of rum, 64,000 bottles of port and 24,000 bottles of whisky and 2,900,000 tins of jam of one pound each.

It is probable that our Pacific coast producers find themselves called into the conflict on the jam item. We fail to see how the rest of the world can fill the order even if they jam everything that looks like fruit. In fact the British war relief societies through the public press are now calling loudly for jam. The hard Egyptian campaign of 1884 proved that jam is not a luxury, but a necessary preventive of scurvy. Millions of pounds of jam were consumed by the British troops in the Boer war and the army in France has been kept well supplied with it in the present campaign. Surely no fruit should go to waste in California since it will take so much jam to get the world to running right again.

The Sour Side of It.

But there will be one thing about the outcome of the present war which no amount of jam can sweeten, and that is the international hatred which will be engendered by war measures. The brotherhood of man has been indefinitely postponed and the only conquest of peace which seems likely will be the capture of The Hague by the Kaiser and the establishment of a war office in Mr. Carnegie's peace palace—but on such great matters as that we are, of course, no authority. We were thinking particularly of the effect upon the future settlement of this country of national hatred which will follow obviously wise war measures. For example, no country this side of heaven would protect the interests of those who went out to fight on the offside: in fact, under the delightful rules of war they would instantly grab everything they left behind them. And so in application of this principle we find the government of Saskatchewan giving notice that the property of British, French, Belgian, Russian and Servian reservists and Canadian volunteers who have gone to the front, will be free from attachment of any kind for six months, and all mortgages, liens, or other covenants they have executed shall be free from adverse action for the same period, etc. Nothing is said about Germans and Austrians who have gone to fight on the wrong side. It is not necessary to say anything: silence says it all. And while we may perhaps sympathize with this discrimination, if that side of the conflict pleases us, we cannot forget wholly the inhumanity of it as between man and man. The Canadian Pacific and other agencies of the Dominion have been particularly active in securing settlers from the folds of the two bad kaisers during the last few years. Their propaganda, as we watched it in Austria last year, was the most sumptuous and seductive we ever saw in operation. We even rode about on Austrian railways in a Canadian Pacific palace car, which was intended to show the peasants the kind of riding they would do when they became rich Canadian farmers! And now these poor people have gone back to be crippled on the very fields from which they were gathered and their possessions in this country are practically confiscated. But that is all right, under the rules: you cannot make war with pampas plumes.

Our New Cotton Defences.

A century ago the United States fought a real war with Great Britain from behind fortifications of cotton bales: this year we are trying to fight a battle of peace with the same material. There seems no doubt about it: the cotton-growers are stung worst by the present war and the application of palliatives seems to tax our statesmanship to the utmost. The ruling brand of statesmen at Washington, under the leadership of President Wilson, really know so much economics that they could not stand for measures by which the government would buy the cotton crop, for they would then be obliged to buy everything else which the war has thrown out of demand. But some of the southern statesmen wanted to buy cotton just the same and so the solid south has a political hole in it—but that is not our problem. Our interest pertains rather to what it is proposed to do to relieve the situation since the proposition for government purchase and storage has gone by. In the first place, it seems possible that the Federal Reserve Board may assume general supervision of a $150,000,000 loan by bankers to aid cotton producers if the plan is carried out. That seems a desirable function of the Reserve Board, and we are quite glad to see it getting busy to ascertain what are its powers in such a large collective loan made by growers. A second possibility which may also be realized is rather more picturesque since it involves fixing a sort of international basis of exchange between this country and Great Britain. Sir George Paish, adviser to the British chancellor of the exchequer, is in Washington this week to confer with the treasury department officials and bankers and financiers generally in regard to

the establishing of such a basis of exchange as has been mentioned. This would be a great convenience in all transactions. But the most immediately interesting thing about it is that we may be able to pay our debt to England in cotton and give the gold to the planters. Sir George estimated that America still owed England from forty to fifty millions in gold. When asked if England would insist on gold payments, he said: "My reply is that as a great and wealthy nation you are just as anxious to pay your debts as we are to have you pay them. Your cotton exports at this season would normally pay the large balance against you. This is one of the reasons why I want to take up the cotton situation while here."

And so it really seems that perhaps some plan for more direct trade between those who grow the cotton and those who actually handle the millions it is worth may be arranged. It is certainly not good economics to require those millions to drizzle through the old indirect and unorganized channels of cotton gambling and small banking and storekeeping until what the spinner pays for the cotton has no resemblance to the price which the grower receives. It is too much that way of course with everything the farmer grows, but if a shining reform can be instituted with such a great crop as cotton, it will probably affect all other produce-handling in time. In this way, perhaps, the cotton crop will become again a national defense.

Why Don't You Get into Live Stock?

We know there may be many reasons in individual cases. Perhaps you haven't money enough to get in: perhaps you do not know enough about it to enable you to stay in if you do arrive. These are things which each man must answer for himself, but in a broad way it seems to us a wise provision of the science of economics that those who have capital and knowledge enough should find the way open to use land profitably while labor troubles are so acute. It may seem cruel as war to say a thing like that, but it may be a war-measure and who started the war?

Some people cannot be coaxed into a thing by telling them that there is a good chance because others are not doing it. Perhaps we ought to forget that the total number of cattle, sheep and swine in his country has declined over 12 per cent in four years: viz., from over forty-one millions in 1910 to less than thirty-six millions in 1914, and that the value of the fewer animals we now have is four hundred million dollars more than the greater number were worth in 1910.

So we drop that aspect of the case and try to attract attention by the fact that the livestock industry is becoming popular. Some people go into whatever they think is becoming fashionable. The figures of the U. S. Department of Agriculture show that in seven of the nine grand geographic divisions of the country the proportion of meat stock is growing right now; in two it is declining; the rest of the country, after a long period in which its proportion of live stock declined, is now gaining. Therefore go to it if you wish to be in the swim!

They All Know San Francisco.

Considering the youth of San Francisco, as cities count age, it is notable how well the town is known in the world. The story is told of a San Franciscan and his daughter who were caught in Ireland when the British were gathering troops. At a steamer landing our fellow citizen found that all aliens were barred from crossing, and that several parties of Americans had been turned back by the military authorities.

"We want to get back to our home in San Francisco." he remarked to the Colonel in charge, "and if you do not turn us back we will regard it as a great favor."

"Let two Californians pass," the Colonel shouted to a subordinate, and in an aside, added:

"It's against orders, but I suppose you'll be glad to get back to the Golden Gate and those afternoon breezes that blow down Market street, eh?"

This happy experience reminds us of our own good fortune in Hungary last year when, having strayed away from our guide, we found ourselves forced to explain our origin to a bunch of Magyars. Our references to the United States did not seem to be intelligible even though our interrogators did know some English words, but the name San Francisco acted like magic. "San Francisco makes good overalls," said one of them as he kindly showed us the way to rejoin our associates. Since then our affections have been more strongly copper-riveted to this town which all the world knows.

Queries and Replies

Querists must give name and address.

The Corn-Ear Worm.

To the Editor: Will you kindly explain the cause of so many worms on our corn, grown this year? Most all of it was very wormy and before planting again this coming season would like to know if there is a preventive. —M. P. F., Walnut Creek.

Whenever you have more worms in corn ears than usual it is because conditions have unusually favored the moth in egg-laying, or the worms in hatching from the eggs. If the ears get into condition to receive the eggs when the moth is ready to lay them, there is such thorough infestation as you describe. This coincidence of favorable conditions does not always occur: sometimes the ears get too far advanced and early sown corn largely escapes that year, and sometimes the ears come too late to meet the moths and, in that case, they are relatively free from injury. With garden corn, in a place with a long frost-free season, the suggestion is to plant corn at intervals in the hope that some of the plantings may shoot ears at wrong times for the moth. Generally the late planted corn escapes, or is more apt to escape than the early planted, but sometimes, in some places, the opposite is true. Although the most persistent and long-continued trials have been made, no practical way of catching the moth or preventing the eggs she lays from hatching, has yet been demonstrated. California is especially favorable to this moth and that is the reason why we have so much wormy corn—which is itself the reason why our canners do not contest the canned-corn business with eastern producers.

Sprouting Pits from Pickled Olives.

To the Editor: Will you tell me if the process of pickling olives destroys the life of the pits for planting to raise trees; or must the seed of fresh olives be planted?—Reader, Sacramento.

We cannot answer your question from actual trial. Presumably the lye-extraction process would destroy the viability of the germ. Probably the high heat for sterilization which is used in canning olives would do this, if it passed the extraction treatment. But these presumptions are not demonstrations which can only come from trying to sprout such pits under favoring conditions. We do not know of such trial. Of course trees grown from pits of the best olives will probably not bear such an olive as the one the pit was taken from. The fruit of the seedling will revert toward the wild type in most cases. This is the reason why olive trees are always grown from cuttings or from scions grafted on seedling roots.

Gumming Spot on a Lemon.

To the Editor: I would like some information in regard to a very fine lemon tree which I have. I recently found quite a quantity of gum exuding from the trunk. I removed the same and could only find a tiny spot from which the gum came out. I saw somewhere a treatment for this kind of a case, but cannot recollect what it was.—J. A. H., Santa Clara.

If that is all the gumming the tree shows, cut around the spot where the inner bark is of good color and take out the circle of bark including the exit point. Let it dry and then paint the exposed surface without covering the adjacent bark, with paint which will not run, or cover it with grafting wax, or put on a plaster of cow manure and soil and hold in place with a burlap bandage. If this is all the gumming you can find, the tree is in good condition and will soon grow bark over the wound.

Grape Vines from Cuttings.

To the Editor: I am writing to find out if limbs cut off from grape-vines will grow if taken off in the spring and put into the ground. The soil is heavy here, and adobe-like.—N. J., Patterson.

Surely: that is the way grapes are usually grown. We do not usually speak of the "limbs" of a vine—unless we refer to the old wood of the vine stump, perhaps. Take a cane or a shoot which grew this year and cut up its more mature part (near to the old spur from which it grew) into pieces about eight inches long and plant them (same end up as they grew) with the bottom end about six inches under ground and one bud above the surface. Do not wait for the eastern "spring": do it in February if the ground is moist and not wet.

Cover Crop for Good Land.

To the Editor: I have a ten-acre prune orchard and intend planting a cover crop; what kind of seed would you advise to sow, and how many pounds to the acre? The soil is good bottom land and needs no irrigation. The annual rain fall averages abut thirty inches. Spring plowing commences about the first of April.—J. D. H., Windsor.

We should sow half the piece with clean burr clover seed, ten pounds to the acre, and the other half with common or Oregon vetch, forty pounds to the acre, and make future practice dependent upon the one which proves better with your land and growing conditions.

Growing Strawberries.

[Extract from Address by Carl Crystal of Sebastopol at Fruit Growers' Convention, June 5.]

Soil for strawberries should be thoroughly tilled, not only just before planting, but should have had a carefully cultivated crop produced on it the preceding year. This will insure a clean condition for the plants to get a quick start and make future cultivation a great deal easier.

Fertilizing.—If the soil is not naturally very rich a good application of stable manure thoroughly worked into the soil a few weeks previous to planting will be found a material advantage. This tends to lighten the soil; also adds humus.

I have experimented with several different mixtures of high grade commercial fertilizers, but have practically decided upon one best adapted to my needs, which contains 2½ per cent available nitrogen derived from animal matter, 8 per cent available phosphoric acid principally from steamed ground bone, and 10 per cent available potash.

This application insures a quick, heavy and lasting vine growth, and insures a heavier yield of berries of a great deal finer color and flavor.

The fertilizer item is not an added expense; it is simply advancing yourself a little money that will come back many fold when the crop commences to mature.

I am using with excellent results 1,000 pounds per acre, sown broadcast on the land and well worked in. This application should be made in the fall, winter or early spring, just before planting. A spring tooth harrow seems to be about the best tool for mixing the fertilizer with the soil, as it has a tendency to tear the soil into very fine particles.

I have a plot of strawberry plants, planted the first of February, this year, that were carefully fertilized and are now producing their second crop of fine large berries.

I have growing, alongside this plot, strawberries of the same age, with the same natural soil conditions, that have had the same care and are less than one-half the size of the vines in the first plot, and have not produced more than one-half as many marketable berries.

I apply about the same amount of fertilizer each year, generally broadcasting during the dormant period and working well into the soil.

Keep off the Runners.—Quite early in the spring the new shoots or runners will commence to appear. These runners should be kept off as closely as possible, so as to allow all possible strength to go to the parent plant for its own growth and the growth of the oncoming crop.

The runners can be allowed to grow after the second crop is about off if more plants are wanted for fall planting. Each runner will, if allowed to grow, set four or five plants. They should be pinched off just outside the second newly forming plant. This will insure two very fine strong plants to each runner instead of four or five small or medium-sized plants.

Fall Plantings.—The best time for planting in a general way would be confined to a period of about four or five months, say from October 15 to March 15. However, local conditions have a good deal to do with this.

I have made very successful plantings in August and September, thereby giving the plants a fine start in the fall, and consequently received a much larger crop the following spring. This requires considerable extra labor and expense, as it is necessary to irrigate these young plants until the fall rains commence, also it takes extra pains to get strong, well-rooted tips so early in the season, but the increased yield the following year well repays the added trouble and expense.

How to Plant.—I take plants in handfuls, and with a pair of shears clip off all the long fibrous roots, leaving them about four inches long. If the planting is done in the early fall before the plant becomes dormant, I also clip off the tops. If this is not done the plants are sure to wither to a considerable extent, which gives them a serious setback.

The clipping of both roots and tops places the plant in practically a dormant condition, and it will very quickly make a new start if properly watered and cultivated.

Be sure to dig a big hole large enough to accommodate the roots when well spread out, and do not under any conditions crumple them up or double them over at the end. Plant as nearly as possible at the same depth they have been grown.

In laying off strawberry ground I row them both ways, which permits cross cultivation with a hand cultivator or wheel hoe, thereby eliminating a great deal of hoeing.

I never keep plants after three seasons, but find it far more profitable to plow them out at the end of the third season and work the ground up very thoroughly, fertilizing it well at the same time, then replanting with vigorous new stock the following spring.

Disease Breeds in Weeds.—A weedy strawberry patch is a fine breeding bed for the multitude of insects and injurious pests. Do not fail to keep your field clean.

We commence cultivating as soon as the ground can possibly be worked in the spring and continue with a very thorough cultivation until the first crop nearly reaches maturity. From this time until the first crop is nearly over, the weeds are pulled by hand, being careful not to disturb the surface of the ground too much close to the plants.

As soon as the first crop is about gone, the first irrigation is given. This is continued until the second crop is well on its way, at the same time cultivating thoroughly, but not too deep or too close to the plant.

During the harvesting of the second crop, June and the first part of July, the irrigating is lessened to quite an extent. As soon as the second crop is off, the water is kept off entirely for a short period, say about three weeks.

Irrigation is then commenced again and kept up continuously until fall. In about three weeks after this fall irrigation is commenced, the new leaves and buds commence to appear, and in a short time the field looks as fresh and fine as it did in the spring. By Oct. 1 the fall or third crop is being harvested. The berries at this time of the year are of an exceedingly fine flavor, color and size, and sell at fancy prices.

I will not enter into the matter of strawberry disease at this time, as I am fully convinced from past experience that practically all the diseases common to strawberry culture are caused by allowing too much foul growth in the field, poor drainage of the soil and poor cultivation.

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Sources of Nitrogen.

[Written for the PACIFIC RURAL PRESS by J. E. Adamson, Pomona.]

In considering the individual elements of the fertilizer question we will take nitrogen first because it comes first in the formula as it is written on the tags of our fertilizer sacks, and in our written and spoken comments on the fertilizer question.

Price and Value.—Nitrogen is one of the most important and expensive of the fertilizers we have to buy. Its price varies from 16 cents per pound, or $3.20 per unit for what is contained in bone meal, up to $4.20 or more for it as it comes in dried blood. All further references to values in these papers will be made in terms of units, each unit being 1 per cent of a ton or 20 pounds.

The price of nitrogen is not necessarily its value from the standpoint of the orchardist, but is rather an indication of the demand for the supply from a certain source.

Blood.—The highest priced supply comes in the form of dried blood, from the great packing houses of the country. The supply from that source is limited, because animals are killed for meat and hides, the blood being a by-product. This fact, coupled with the desirability of the nitrogen contained in blood, keeps the price up. This desirability comes from the fact that blood is easily decomposed and contains no injurious ingredient that is not wanted in the soil.

The actual content of nitrogen in blood varies slightly but is generally about 13 per cent, and the price $4.20 to $4.75 per unit. The purchase of blood at so much per ton is thus less liable to lead to error in the value than the purchase of other materials.

Bone Meal and Tankage.—Nitrogen from animal products other than blood has a considerable variation in value due to the nature and preparation of the material. Bone meal contains two to three per cent nitrogen, depending largely on whether the bones were fresh and carried with them considerable meat refuse.

It is usual, however, to call the product tankage if considerable nitrogenous material is present, and tankage is the most irregular in value of all the fertilizer materials we buy.

It varies from "low grade" carrying four per cent nitrogen through the medium grade carrying six per cent or more to the high grade carrying 10 per cent or more, the price varying with the amount of nitrogen over quite a wide range.

The high grade tankage is usually a mixture, in fact any tankage sold under a uniform price has been mixed to hold the percentages in regular ratio.

Worthy of careful scrutiny is the large quantity of hair which contains a high percentage of nitrogen, but in a form that is slow to come into condition for use, as it is almost impervious to decay.

Another thing found in some tankage is grease, which also is quite a preservative. This is not found so much in tankage made from the ordinary slaughter house products, as in fish scraps; and has been the one bad feature of fish fertilizer.

Chilean Nitrate.—One other source of nitrogen is the nitrate beds of Chili which have for many years been the main source of the world's nitrate market. The principal value of nitrate of soda, is that it is ready for use. It is in the form of nitrate, which is the one form in which trees can take their nitrogenous food. If put into the soil in any other form it is necessary that the material be acted on by certain bacteria in the soil. It decomposes from one stage to another until it becomes a nitrate. With nitrate of soda, however, there is a danger, especially where the soil is heavy and the drainage poor.

The soda is left in the soil when the nitrogen has been used, and starts a deposit of black alkali if not washed from the soil by drainage. Of course the accumulation would be slow, but if it should continue, the damage would be sure. One thing is noticeable, however. The ones that talk most of the danger of black alkali from the use of nitrate of soda will advise the use of complete fertilizers containing a liberal proportion of the nitrate. This is not apparent from a casual glance at the tag, but it will be noticed in the list of sources from which the mixture is made.

Air and Legumes.—The real and only limitless source of our nitrogen supply is the air. Nearly four-fifths of the atmosphere is nitrogen where it seems to have no special mission to perform except to act as a dilutant for the oxygen.

Plants which bear their seeds in pods, as do peas, beans, and the clovers, have the properties of taking nitrogen from the air and fixing it in their roots and stems in such a way and in such quantities that they leave the ground richer in nitrogen than they found it. For this reason they have been used for years in crop rotation to restore wornout soils. Other plants, such as wheat, barley, rye, etc., use this supply and will if plowed under give back what they took out but no more, so far as nitrogen is concerned.

The knowledge of these powers of the legumes as they are called led to their use for the improvement of orchard soils by planting them for cover crop to be plowed under when the maximum nitrogen is fixed, which would be just as the seeds are forming. That is free from any suggestion of fault, either as to price or harmful ingredients.

We might have mentioned barnyard manure, but that is not really a source but rather supply that comes to us from the real source. The fine thing about going to headquarters, (the air, by means of legumes) for our nitrogen is that we get other benefits free too as we will see later.

If pullets are fed all the Kaffir or Egyptian corn they will eat once a day, and given wheat, dry mash and an abundance of green feed they can't help getting fat. But they will not get fat on barley no matter how much you feed them.

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Irrigation or Fertilization.

To the Editor: I have just read the article on "Watering Prunes Now for Next Crop" in your issue of October 10, and a thought struck me that if it is advisable to keep the tree growing and thus hold its foliage till as late in the season as possible in order to strengthen the fruit buds, why is it that they advocate and do practice fall pruning on the apricot tree, denuding the tree of nearly all foliage and exposing the fruit buds to all the sun and light they can get?

I don't think that fall watering of the prune will cause it to produce heavier crops. My idea is that the soil needs nourishment; man cannot live by bread alone, no more can a tree live and produce by water alone. Just consider what those large trees have taken from the soil during the last 10, 12 and 15 years and what has the soil received in return? Nothing but water. It is against all the laws of nature. Fertilize your orchard and I think you will see a vast difference in the thrift and productiveness of the trees.

These remarks are not written in a spirit of "know all," but as a suggestion as to the probable solution of this very much vexed question "Why don't our prune trees produce as they used to?"—John Vallance, Oakland.

[Our correspondent is right in placing emphasis on the wide need of fertilization, and fall irrigation is not at all at enmity with that claim. However, one can never be sure that the tree needs fertilizers until he has given it a chance to grow well and bear well under the influence of adequate moisture. Besides the tree can only use fertilizers when there is enough moisture present. But on the other hand it may be urged that in many cases if ample humus is present by cover crops or stable manure the soil will be more retentive and the trees stand in less need of fall irrigation, and that is true. In fact, irrigation and fertilization are so intimately related in effects that one should never try to stand one off against the other. The wise grower is he who assures himself that the tree has moisture enough, and if water does not help the bearing, let him turn to fertilization. Different prescriptions might be wisely made for the apricot and prune, because one ripens its fruit so much earlier and stands in that much less need of added water. Besides the apricots which are chiefly grown are more disposed to overbear than the prune. But probably the most important reason for the earlier pruning of the apricot lies in the fact that it is through its work while the prune is still on its job.

Every kind of a fruit tree must have moisture enough to hold foliage active until fruit buds are adequately strong and to protect the tissues of the new growth against desiccation (as shown by shriveling in extreme cases). When the soil is dry and rains late, this moisture must come from fall irrigation. This lesson has been clearly learned in the San Joaquin valley with peach trees and when a tree has fall moisture enough to keep it in good condition it is protected against starting too early from its dormancy.—Editor.]

TREATING PEACH TREES WELL.

[Written for PACIFIC RURAL PRESS.]

Several commendable practices are necessitated in a deep sandy peach orchard in Merced county by J. H. Lupton's plan of putting in a cover crop. Right after the crop is off he irrigates, and in that sand where water may be found twelve to twenty feet below the surface he says frequent irrigations are necessary, but not much water is needed each time. A little water soaks deep very quickly. Enough of it to leach plant food out of reach of trees would waste both water and fertilizer.

Right after the irrigation he cultivates. He works the ground up fine and sows vetch. This is well up before frost comes. The frost just checks the growth and the plant keeps on developing humus and nitrogen for a soil that needs it considerably.

So he has fall irrigation, fall cultivation and winter cover crop. His prospects are fine.

HAY RAKE FOR PRUNINGS.

[Written for the PACIFIC RURAL PRESS.]

Last year the prunings on 135 acres of apricots, almonds, peaches, etc., on a ranch in Merced county, were handled at one-third of the usual cost.

The men, when pruning, dropped most of the brush far enough from the trees so a hay rake would gather it up. They kicked the rest of it away from the row when each tree was finished. With a two-horse rake the prunings were gathered clean and taken at once to the pile. No forking is required till the pile is burned.

A 6x6 drag, 14 feet long, with teeth protruding six inches, had been tried and discarded because on that sandy soil too much dirt was collected with and in front of the brush. They think such would be all right on hard ground or with a short haul.

A rake made especially to gather prunings is made by Anderson-Barngrover Co. of San Jose, but we do not know that it is widely used. Experiences of our subscribers will be welcomed to our columns.

TOPPING EUCALYPTUS.

To the Editor: Is it proper to top three-year eucalyptus trees now growing like whips? If so, what month is best?—G. A. L., Dos Palos.

[It depends on what you use them for. We have seen old trees topped back severely and they grow a bushy top, fine for shade. We take it you are growing them in a grove for fence-posts or wood. They must be a little too close together if they are not branching. If you want them to grow stocky, thin them out a bit and top them not severely. Do it any time, but winter may be preferable for convenience and greater wood growth. Mr. Wheeler has a seven-year grove in lower Santa Clara valley planted in six-foot squares. He must now take out alternate rows and says he would plant in ten-foot squares if he had it to do again.—H.]

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1000 lbs. per acre once in each four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500%. At Maryland Ex. Station $1.96½ gave $22.11—over 1000%. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $250 invested in land.
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Community Control of Pear Blight

[Written for PACIFIC RURAL PRESS.]

Pear blight became so bad in Sacramento county that last summer Horticultural Commissioner Howard Kercheval and Deputy Commissioner F. C. Brosius laid plans under the State law to use their powers to the limit, to exterminate pear blight as quickly and thoroughly as possible.

In August they started inspection not only of orchards but of stray trees along roads or in small yards about town. Wherever blight is found a "Notice of Pear Blight Eradication" is served, describing the location of infected trees, warning the owner that they are declared a public nuisance and that if reasonable steps for thorough eradication are not taken within thirty days the Commissioners will "abate the said nuisance (in accordance with Chapter 299, Section 2322, Horticultural Statutes) and the expense thereof will become a lien against said property."

They are not arbitrary in enforcing the law promptly, but they mean business, and no dilatory tactics.

One orchard of four acres had 60 trees condemned. The Fair Oaks inspector sent in a report October 7, showing inspection of over 2,000 trees. Notices were served next day for those found diseased.

Such work necessarily may stir up violent opposition, yet in Sacramento county the growers see the need of it. The campaign was further greatly strengthened at the meeting of pear growers at the State Fair, where resolutions were adopted as given in part below:

"Resolved, That the pear growers of Sacramento valley, in session at Sacramento, September 16, recognizing the great injury that is being done to the pear industry, to the community, and to the State by the pear blight, endorse the efforts of the County Horticultural Commissioners in their fight for the eradication of this disease, and pledge our aid to them in their difficult undertaking.

"Resolved, further, That we solicit the aid and support of our State University toward the solution of some of the problems in connection with this disease, that are yet to be worked out; also that we ask the further support of the State Commission of Horticulture to the end that community effort be encouraged and eventually perfected, for only through such can we ever hope for the most effective work."

AGAINST TOP WORKING.

[Written for PACIFIC RURAL PRESS.]

"With grafts you always have the problem of decay," says G. E. Merrill. "About the second year I chisel out the old stubs which are partly overgrown by the grafts. Most of them would cover in time, but the rot would be inside and weaken the tree. So I help them to do it sooner." says Mr. Wheeler.

"Never encourage the grafting of prunes on old peach trees," says Mrs. E. McLeod. "I tried it and the roots and trunks are rotted. Never have had good crops from them. If I had pulled them out and lost a couple of years, I'd have a solid block of good bearing trees now instead of various open spaces and broken trees."

Another of our friends remarks that it takes his law business to keep his orchard going because he works it over so often to new varieties that he has the habit.

MANURE AND LABOR COST.

[Written for the PACIFIC RURAL PRESS.]

While many California dairymen have long known that one of the big advantages in keeping dairy cows came through the increased fertilization of their land it is doubtful whether many have realized that the manure from an average dairy cow will more than pay for the labor of caring and feeding the animal. That such is the truth however is shown in bulletin 240 of the University of Wisconsin, which says that the average annual value of manure from two herds was found to vary between $12.04 and $16.85 per cow per year. The total annual labor cost per cow was found to be between $16.24 and $22.80 of which from 65 to 85 per cent is paid for labor of milking.

It should be said however that the value of the manure depends largely upon the way the cow is fed, manure from poorly fed and half starved cows being worth considerably less than that from well fed animals. Thus all along the line we find that good feeding pays better than starvation methods.

OLD AND NEW PEACH PRUNING.

(Continued from page 393.)

strong stocky limbs than on slender ones.

There is little danger that leaving just the right number of spurs will cause a light crop by fruit not setting, for the spurs will be so strong that if pollen drops on the flowers at all, fruit will almost invariably set and grow as well as climate and pests will allow. And if the fruit should be a bit thin, it will be larger to make up for it, and the canners jump at big fruit.

The longest new growth will be cut back to shape the tree; shorter new growth will be left alone as much as possible. The vigorous wood that will come from the cut shoots may be cut off entirely in summer to induce setting of fruit spurs along the old wood.

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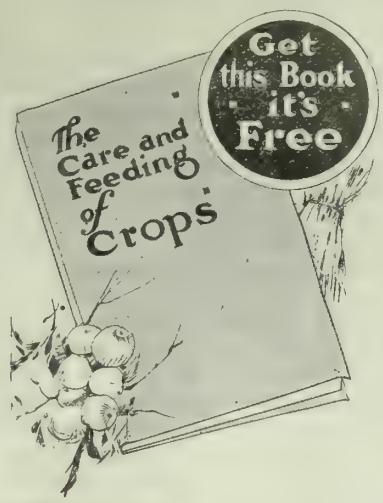

Maintenance of Soil Fertility.

"There are three ways in which the essential plant-food may be added to the soil. These are the growing and plowing under of cover crops, known as green manuring, the use of barnyard manure and similar products and the application of commercial fertilizers—"

"Unfortunately, in the West, especially in unirrigated sections, the use of green manuring is limited by the lack of sufficient moisture, while the supply of barnyard manure and related waste products is, of course, insufficient to meet the demand.

These two types of manuring greatly improve the physical condition of the soil and are very beneficial. They should be practiced whenever possible, but, in order to supply sufficient of the available plant-foods to meet growth requirements and thus produce a large profitable crop, commercial fertilizers must be used."

This is a quotation from our book, "The Care and Feeding of Crops." You ought to get a copy at once. It contains most valuable information on soil treatment and crop raising.

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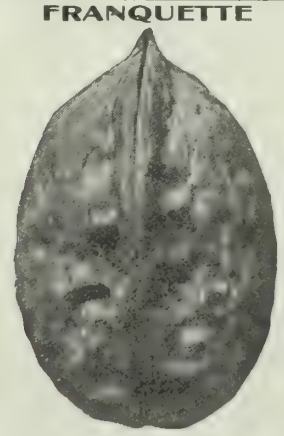

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Farmers Use State Library.

[Written for the PACIFIC RURAL PRESS.]

When your County Supervisors have established a county library under the State law, you may ask the county librarian for books on any subject, and if they are not in the county library they will be sent to you from the State library free of cost.

A crippled boy in Yolo county read all the books in his country school; and when he was unable to pay the fee for the use of Woodland city library books, the trustees paid it for him. His advertisement of their generosity brought so many requests that they co-operated with the Supervisors and made really the first county library in California.

The real origin of the county library was the growing demand throughout the State for library service and the desire of the State library to meet that demand. The Yolo county incident was but one of many. Sacramento had the first one after the county library State law was passed.

What the County Library Does.—Now, under the State laws inspired by these events, if you want to study up on pruning or fertilization or baby shows or civil engineering or the Madonnas or anything that has been talked about on paper, ask the nearest branch of your county library for it. If you live in the oil-fields or the mountains, or the peach farms, or among chickens or pigs, and want a story-book to read or high-priced music to sing or pictures to decorate social or educational halls, ask the county librarian.

If you want books in foreign languages, get them from the county library.

If there is anything you want to know, ask your county librarian for books, magazines, or pictures on that subject.

If the book or paper you need isn't in the county library and you are in a hurry, the librarian will telegraph to the State library and it will be sent direct to you free of charge, for the State will pay the transportation.

You have a county librarian at the county seat, and a branch library pretty close to you if you live in any one of the twenty-four counties from Del Norte south to San Diego, which have already established them.

How to Get One—If you don't live in these, ask the State Librarian at Sacramento for a blank petition, fill it with signatures of your fellow-unfortunates, get a crowd of them to go with you and present it to your Board of Supervisors. If they don't like it, they will as soon as it gets to working.

How They Like Them.—At the State meeting of County Supervisors at Merced last May it was almost comical to see how Supervisors from counties where they have county libraries would buttonhole the others and do real missionary work for the cause, bringing them to the Merced county librarian for further persuasion.

They had appropriated all the way from $43,000 in Los Angeles county to $2,600 in Inyo, and found no objection to the special tax levied for that purpose. Every family in such counties sees that the money is being spent in a way that supplies a long-felt need. Supervisors of Tulare and San Diego counties were especially active in telling others.

County libraries are thickest where their work is best known. Every county in the San Joaquin valley has one.

What Merced Is Doing.—With a modesty characteristic of the trained county library corps of the State, Miss Winifred H. Bigley told us that other libraries are doing more than hers. But when we asked again as to her own work in Merced county with enthusiastic courtesy, also characteristic, she told of her county library, with its fifteen branches, and a loyal population supporting it. The Supervisors have appropriated $12,000 a year, and the city has paid $2,800 a year for two years, the city having a contract by which the county library serves the city also. For the fiscal year 1913-14 expenses as reported to the State Librarian were as follows: Books, $3,378.58; periodicals, $242.30; salaries (including branches), $3,920.30; binding, $159.75; printing, rent, postage, etc., $1,709.80. Total, $9,410.73.

If the school trustees wish to turn their school libraries and library funds into the county free library, other books will be supplied at county expense for the transportation, just as often as one set seems to be getting old. If the trustees believe in the good influence of beautiful environment on growing children, they may borrow the best pictures from the State library through Miss Bigley and have them hung in the schoolrooms until they want a change. Supplementary reading books for the schools will be furnished on request, and permanent reference books. Stereopticon slides may be furnished to schools which have lanterns. A set of stereoscopic pictures is kept at each of the reading-room branches, and the views are often changed.

A blind man in Merced county is supplied with plenty of his own kind of reading matter, though this is done direct from the State library, because such books may be mailed free of charge.

Many books in the Russian, French, German, Spanish, Swedish, and Portuguese languages are loaned to the foreign element of Merced county. and the foreigners come in to talk about the books and ask for others.

At Los Banos the branch library is moved to a building between the grammar and high schools. The attendance of children of foreign-born parents in its reading-rooms has doubled in a year, and it is surprising how the little Hanses and Antoinettes and Ivans read, not American fiction so much as American history and biography—future citizens in the best kind of making.

If there are no special accommodations at the cross-roads for a library, a bunch of books is left there in charge of a housewife or storekeeper, who receives $5 a month for recording them as they are taken out and returned.

Such a station is now at Gustine; but the women's club is saving money

These Men Know!

Every Fruit Grower in California knows the California Fruit Distributors, the largest organization of its kind in the State. They use and recommend

WESTROBAC

for

COVER CROPS IN ORCHARDS

READ THIS LETTER

MR. C. F. PENNEWELL,
Sacramento, Calif.

Dear Sir:

In compliance with your request for a statement as to results our members have obtained from the use of your bacteria in inoculating their various cover crops:

Will say that those of our members who have used this for inoculating vetch and Burr Clover are the Producers' Fruit Co., Geo. D. Kellogg & Son, Penryn Fruit Co., Schnabel Bros. & Co., Vacaville Fruit Co., F. B. McKevitt Co., Silva Bergtholdt Co., and the Newcastle Fruit Co.

We find that during last Fall, our members inoculated about 400 acres, and we have received very favorable reports from all of them, particularly those who allowed their vetch to attain its full growth before turning over.

Trusting this is the information you desire, we remain

Yours very truly,
CALIFORNIA FRUIT DISTRIBUTORS.
By W. H. DEMENT.

Sacramento, July 3, 1914

PUT HUMUS AND NITROGEN in YOUR Orchard

Increase your fruit crop and improve its quality by planting a cover crop of vetch or burr clover inoculated with WESTROBAC.

WESTROBAC is a pure culture of acclimated nitrogen-gathering bacteria bred fresh to fill each order and therefore guaranteed fresh and vigorous when it reaches the user.

One can of WESTROBAC will inoculate enough seed for one acre at a cost of $2.00 f. o. b. Oakland.

Order Now.

GET THE BENEFIT ON YOUR NEXT CROP

Send for booklet—Learn what WESTROBAC will do for you.

Western Soil Bacteria Company

President, George H. Mastick
Vice-Pres., H. F. Chadbourne
Sec-Treas., T. M. Paterson
Gen'l Mgr., C. F. Pennewell

Sherwood Bldg., - Pine Street.
San Francisco.

Fruit Trees

ELMER BROS. NURSERY

AT SAN JOSE, CALIF.

The nursery that helped to make Santa Clara Valley famous.

QUALITY IS OUR MOTTO

We propagate all kinds of fruit trees; also grow the best strain of the Franquette Walnut. We make the prices right. Send for our advance price list.

KIRKMAN'S

RELIABLE TREES

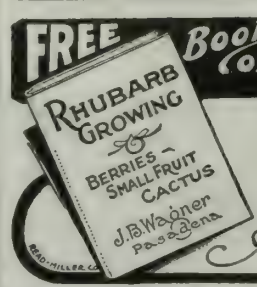
Trees that grow and bear true to name. Now booking orders for next season. Write us now about what you will want.

Kirkman Nurseries

2525 Tulare St., Fresno, Cal.

FREE Book on RHUBARB Culture

WRITE FOR IT TODAY —



September—October—November are three of the best months we have for planting RHUBARB AND CACTUS

If planted now you should derive good results by spring.

J. B. WAGNER - Pasadena, Cal.

The Rhubarb - Berry & Cactus Specialist.

Retail ALFALFA SEED Wholesale

New crop ready for delivery now. We guarantee everything we sell.
Samples, prices, etc., on application.

V. A. PETERSON ALFALFA SEED CO.
Arbuckle, Calif.

We are the only exclusive Alfalfa Seed Dealers in the West.

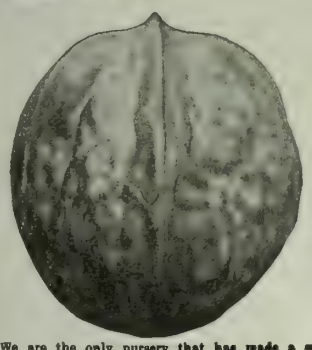
CITRUS HEIGHTS NURSERY

SACRAMENTO, CAL.

We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

WALNUTS

Grafted and Top-Budded A Leading Specialty



We are the only nursery that has made a success of top-budding the walnut, and invite investigation. There is no finer stock in the State, and all of our stock is propagated from known bearing trees. Careful planters will take heed of this. Please write or call.

PEDIGREED FRENCH PRUNES Blenheim Apricots.. Ornamental Stock in Pots. Landscape Gardening a Specialty.

LEONARD COATES NURSERY COMPANY
Morganhill, Cal.

TREES

French and Imperial Prunes, Bartletts and other Pears; Tuscan and Phillips Clings, Fay Elbertas and other Peaches. Cherries, Plums, Apples, Grafted Walnuts, etc. Stock pure and of best strain. Place orders promptly. Prices reasonable.

TABLE GROVE NURSERIES
Healdsburg, Cal.

TREES
Grown on Sandy Loam Soil

No Spike Roots.
Almonds on Almond & Peach root.
All Varieties of Fruit Trees for sale.
Write for Special Prices.

Land for sale in large and small tracts on small terms. We plant and care for orchards and guarantee a stand of 95%.

Plenty of water.

RIPON NURSERY and IMPROVEMENT CO.
J. F. STUART, MGR.

TREES

Grown on Russian River Sandy Loam soil without irrigation are best for several reasons. Our prices are right. We ship subject to approval. Write for price list.

MILLER & GOBBI
HEALDSBURG CALIFORNIA

IRIS

Price list, describing over 200 species and varieties, mailed free upon request. Upon receipt of 15c in stamps, we will mail you copy of our new Illustrated Catalog. Color plate alone is worth the price.

THE DEAN IRIS GARDENS,
Moneta, California

for a library building. The Dos Palos women's club studied Holland last year and borrowed pictures through the county library to illustrate. The Merced Music Club borrowed its supply of music through the county library. The five high schools in the county looked to this source for the reference books which it would be poor economy to buy. Women who couldn't see the "Bluebird" played, read copies obtained through the library. Twenty books of one kind were borrowed at once for the Shakespeare Club. The Pacheco Pass school teacher took charge of county library books for both adults and children. The Atwater branch has the directors' room in the bank building, and the community has bought a fine Brussels rug and pictures to decorate. Snelling has made a social center of its reading-room.

Over 2,000 special request books were borrowed through Merced from other libraries last year, 450 from the State library, and the rest from the University and county libraries. Only such books are bought as are likely to be in constant use. The State library will loan as many as 1,000 books to help willing Supervisors to establish county libraries.

The librarians are required to pass civil service examinations, showing them to be professionals, tactful, original, energetic, and always helpful. The last-named quality seems to be the watchword of the service. That they live up to the requirements is the reason for the loyal support they receive at home and for the rapid spread of the system.

AMERICA'S DUTY TO FEED THE WORLD.

If America puts its hand to the plow in its effort to feed the world, it has assumed that responsibility now. Not since the harrowing days following our own strife of the sixties have the tillable acres of this country faced such a possible drain upon their bountifulness. Without even dimly prophesying the duration of the war now raging, we are already assured of the fact that next year this country will be the storehouse of the world. Every farm owner, every tenant and every shareworker will have his part to play in fulfilling this great responsibility. No matter how remote his residence, he will hear Europe's call for beef, bacon, and bread, and on the amount he has to sell will depend not only his satisfaction of having served his fellow men but the additional satisfaction of having served himself; for big crops, much stock, many hogs next year will mean big profits.

It is thus that the American farmer begins his fall work with two strings to his bow. With one hand he is rescuing the perishing and with the other he is reaching out for tangible encouragement toward a bank account and a better home.

Now Is the Time to Start.—Now is his opportunity, and this month is the time to lay his foundation. There are two lines along which he should plan his work, but only one line along which he should work his plan. First, he should utilize every available part of his land, and second, he should strive to raise the average yield of his farm per acre. There will be no danger of over-production for the crops sown this fall. The man who has a big yield will find a big market. But to get this yield means a better kind of farming. Now would be a good time to break away from some old-fashioned ideas about the moon; from some old-fashioned ways of shallow plowing; and some old-fashioned carelessness in cultivating; and some old-fashioned theories in regard to seeding. In those parts of the country which do fall plowing and fall seeding, the way the seed bed is made and the way the sowing is done this fall will determine the crop per acre next year more than next year's rainfall, hot winds, or frosts. In an experiment not long ago described by F. L. Peterson of the University Farm at Davis, California, he says:

"As the pressure for supplies becomes greater, it becomes more evident that the world cannot afford large farms skimmed over with careless culture. In an actual experiment of a gain of 200% which was made in the productiveness of a certain area, 100% was found to be due to better plowing and harrowing, 50% to better cultivation, and the rest to better seed."

A lesson or two like that in every community would soon work its way into farm operation in such a way that several costly practices sanctioned by time and custom would become in a short time as historical as cradling wheat and threshing it with a flail.

To the Work.—Our work begins this fall in our plow and seeding. and our opportunity to help will come next year at our harvesting and selling. We have more at stake than our profits, although our profits will be a goodly stake. We have at stake our commercial supremacy, our agricultural leadership; and above this, towering over everything and stifling our selfish hope of gain, or our commercial instincts, is our ability and our willingness to fill the pitiful hands which we know will be stretched out to us from the devastated, wasted fields across the seas.—Douglas Malcolm.

SELLING WITHOUT MIDDLEMEN.

We are almost daily receiving letters from subscribers who protest against the wide margin between prices paid by the consumer and those paid to the grower. Part of this margin is necessary for transportation, etc., but much of it may be eliminated. A novel way of doing this is accomplished on staple products by the North Carolina Experiment Station, co-operating with the State Department of Agriculture. They have a "Division of Markets," which puts out a "Farmers' Market Bulletin," listing free of charge, farm products for sale.

The lists are in tabular form for each product, given each to the county, shipping point, grower or growers' organization, postoffice, quantity for sale, and shipping date.

Only the bona fide producers may list anything, and only good-quality products which remain in their own hands or are held by a growers' organization, or will be ready for shipment between the dates indicated. Purchasers may inquire prices from either the individuals listed or from the Division of Markets, which attempts to fill all orders direct from the growers.

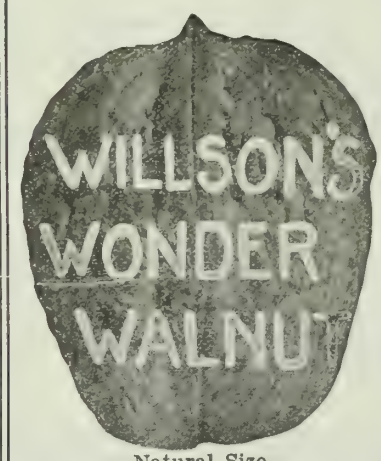
Germain Established 1871 SEED & PLANT CO.
326-328-330 SO. MAIN ST.
LOS ANGELES. CALIFORNIA

1914—15

Dutch Bulbs

Our 1914 Importation of Bulbs from Holland has just ARRIVED
Buy early to get varieties.
Bulb and Fall Planting CATALOGUE free on request.
For better service please address Dept. C.

Germain Established 1871 SEED & PLANT CO.
326-328-330 SO. MAIN ST.
LOS ANGELES. CALIFORNIA



Natural Size

Greatest Walnut in Existence

Earliest Heavy Bearer
Customer on investigating trip says:
"You certainly can show more crop on trees than any of them. Your nursery trees are the best I've seen anywhere."
All trees grafted on Cal. Black Stock limited
Write for circular with prices.

Encinal Nurseries
Sunnyvale, Santa Clara Co., Cal.

If you want the best
TREES
Write for Price List.
UNITED FRUIT CO.
NEWCASTLE, CAL.

Dutch Bulbs

A large assortment of Hyacinths, Tulips, Jonquils, Narcissus, Ranunculus, Anemones, Iris and many others. All described in my Bulb Catalogue, which also contains a complete list of Flower Seeds for fall sowing. Mailed free.

THEODORE PAYNE
315 S. Main St. Los Angeles

DEWEY, STRONG & CO.
SCIENTIFIC PRESS PATENTS PATENT AGENCY
911 Crocker Bldg. S. F.
Circular containing 100 mechanical movements mailed free.

Agricultural Review

DECIDUOUS FRUITS AND NUTS.

A wholesale fruit dealer of New York City said last summer that retailers liked fruit in packages small enough to re-sell to consumers without handling the fruit itself, that consumers liked it better, and that the fruit kept better that way. Cartons of cherries were examples. Last year the Winters Dried Fruit company attempted 10-pound boxes of dried fruits with this same idea. They didn't work so very well because the package was too large for most housekeepers. This season they are putting three cartons per 10-pound box, each contaning a different kind of fruit. If the housekeeper wants less than 10 pounds she can still buy a carton of dried fruit in the original package.

Seventeen farmers of Napa county told horticultural commissioner A. D. Butler at a recent meeting called to discuss frost fighting, that they expect to install plants this winter. The Farm Bureau will probably buy the supplies in large quantity to distribute at cost. It will be remembered that Napa valley was hard hit by frost late last spring.

A carload of dried apples was shipped last week from the Barlow ranch.

Many late freestone peaches of merit have been produced, but there is very little encouragement to plant such, for the canners have no use for them. Among the best known to us was one put out by W. T. Kirkman years ago. Samples of a large, smooth, dry fleshed, rather tart freestone have just come to our desk from H. A. Bassford of Vacaville. Mr. Bassford has had long experience in fruit growing and has tried out many new varieties.

The Sebastopol Berry Growers are to bond themselves for $50,000 to build their new warehouse. Preliminary plans provide a two story building 60 x 100 feet and a shed along the railway track 240 feet. A new precooler, an egg department, a cannery, and shook warehouse will be provided. An attempt at consolidation with the Sebastopol Apple Growers' Union last winter failed from minor causes and may be effected before next crops come.

Sixteen Sonoma county prunes grown by H. Honor weigh a pound. From a 25-acre prune orchard in Kern county 45 tons of dried fruit was sold this season from 15-year trees. Nearly a hundred tons of prunes were sent in one shipment last week from San Martin in lower Santa Clara valley.

Fifty tons of apricot pits from the Pomona cannery were sold at $40 per ton to a Los Angeles company which will remove the kernels and send them to Germany for manufacture into prussic acid. Twice as many peach pits for fuel went at $5 per ton, but those from Salways were sold at $10 for nurserymen's seedlings.

Tons of processed and dried fruits from 16 counties of the Sacramento valley are ready and waiting for the completion of the California building at the Panama Pacific Exposition.

Mendocino county, whose exhibits won 17 prizes at the San Francisco Apple Show, is to have such a show of her own at Mendocino Oct. 27 to Nov. 3.

About 42,000 almond trees were planted the past season in Glenn county according to horticultural commissioner Carl Ley.

CITRUS AND SEMITROPICAL.

Dooryard culture seems to be the criterion by which to judge prospective commercial plantings. In Shasta county it is persimmons and pomegranates that will be tried on larger scale. The pucker is to be taken out of persimmons in 15 hours by submersion in carbon dioxide gas at 45 pound pressure.

Tulare fruit growers and packers met this week in special effort to sign up fruit to be held on the trees until the Government's recommended proportion of one part acid to eight parts of soluble solids is reached. This eliminates all color tests. It was estimated that the Tulare navel crop this year will be 5500 cars.

Lincoln, Placer county, has a fruit growers' organization but it has not been directly affiliated with the State Fruit Exchange. The citrus growers of this section are considering the organization of a local of the California Fruit Growers Exchange (citrus).

Demand for figs has suddenly dropped in Fresno county to almost nothing.

Seedless Tokays are being tried out by a grower in San Joaquin county.

Sacramento county citrus and olive crops are reported as 100 per cent by deputy horticultural commissioner F. C. Brosius.

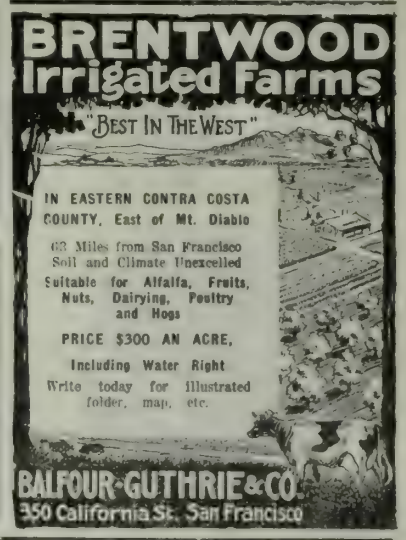
A large commercial avocado orchard is to be planted this winter between Riverside and Redlands.

The San Antonio Fruit Growers' Exchange had 150 carloads of Valencias yet to ship on Oct. 11.

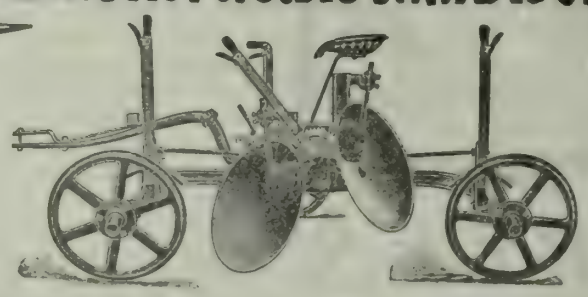
SPLENDID WALNUTS.

Not so large a crop and so large nuts as expected, but a grievously (?) small per cent of No. 2's is reported by the California Walnut Growers' Ass'n below.

"We have to advise that indications now point to a lighter crop of California walnuts than the State has produced for many seasons past. Our present estimates are for a total crop of 8,000 tons or less for the State. While the sizes of the walnuts are not running up to our earlier expectations, which is undoubtedly due to the fact that the nuts have ripened a little prematurely this year, and to the further fact that the outer hulls which drop off before the nuts are gathered, were unusually thick and pithy this season, nevertheless the quality of the goods is excellent. A peculiar feature of the output this year is the fact that, while the nuts are not running heavily to large sizes, nevertheless they are running exceptionally light to No. 2's. Against an average in 1913 of 27 per cent No. 2's the crop is only averaging 3 per cent of this grade this year. We have therefore found it necessary to greatly reduce



Mathews Reversible Twin Disc Plow



THIS is the only reversible disc plow which does not use segment to fix the position of the disc, and is therefore the only one which will always plow the same width of furrow both ways on level land and hillsides—and stick to the work on hillsides.

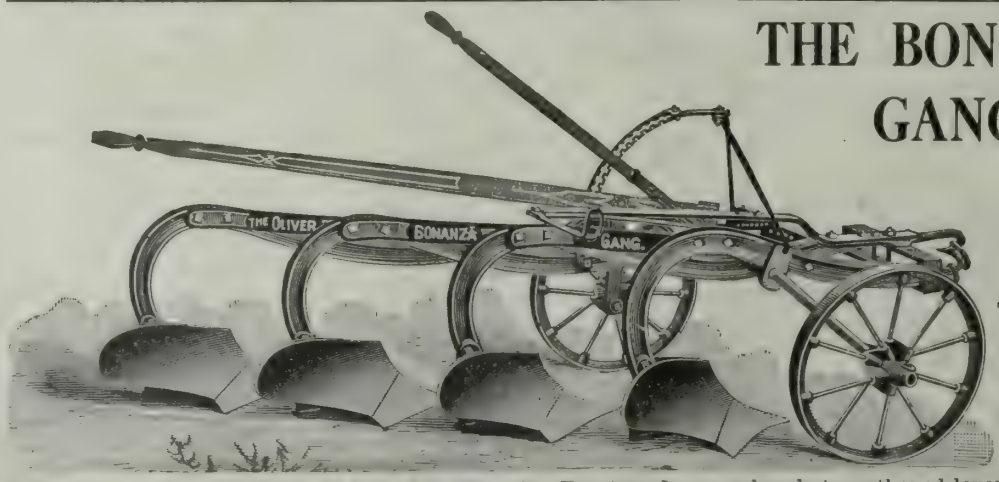
It leaves no water furrows. Discs are fixed in exactly the same working position every time the plow is lowered. Two discs wear twice as long as one—but cost no more.

We are general agents for a complete line of Disc plows. Glad to tell you about them at any time.

Newell Mathews Co.
ESTABLISHED 1886
Implements, Wagons, Dairy Supplies, Road and Grading Machinery
200 N. LOS ANGELES ST., LOS ANGELES

The California Favorite

THE BONANZA GANG



Chilled or Steel

Three or Four Bottoms

Oliver Agents Everywhere

Better than ever—Extra heavily braced for Traction E ngine. Improved and strengthened levers reversed for orchard work. New Beams—New Braces—New Bot toms. Get the particulars by mail from the makers.

OLIVER CHILLED PLOW WORKS, 7 MAIN STREET SAN FRANCISCO

all No. 2 orders and are now pro-rating on a basis of 40 per cent on all orders for this grade. We regret having to do this but there is no alternative. We simply haven't got the goods and they are not obtainable. We have not shipped a car which has not cracked up better than 90 per cent good and the average crop is showing about 94 per cent, the great predominance being to beautiful clear white kernels. We firmly believe that when the consumer demand for walnuts around Thanksgiving time comes, the markets generally will show a short supply and a consequent much stronger demand. It can hardly be expected that this demand on the part of consumers will develop much before the holiday period as the average person has not thought of buying walnuts during the hot weather while so much fresh fruit is still available. It is now practically certain that but very limited supplies of foreign nuts will be available for this Thanksgiving trade, and as the average consumption of walnuts at this period is accurately estimated at 33 million pounds, it is hard to figure where any where near this quantity of walnuts will be found this season."

RECLAMATION NOTES.

Imperial valley has organized into an irrigation district and has called election for issuance of bonds to buy the system already in operation. There are 500,000 acres in the district now, but it looks as if this might become 1,500,000 acres, 2-5 of which is in Mexico.

The Lovelock Valley Irrigation District was recently organized in Nevada to drain Humboldt lake by a system of 20 miles of canals at a cost of $40,000. This is the first irrigation district to be formed under Nevada laws.

Engineers have told the people of lower Santa Clara valley that they could irrigate 50,000 acres at a cost not to exceed that of pumping water 30 feet. There is much interest in the proposition to form an irrigation district there.

Co-operation of city and county and irrigation companies is enabling the cleaning out of upper Tule river near Porterville.

TRANSPORTATION.

The American-Hawaiian Steamship Co. has announced rates on dried fruits to the Atlantic seaboard of 40 cents per hundred pounds, a saving of 10 cents over old water rates and a saving of 70 cents over old rail rates.

About $200,000 per month is being spent on the railroad connecting San Diego with Imperial valley and more is to be spent in the few remaining months until the last of the tunnels is completed.

For a highway across the lower coast mountains, much interest is manifested in Kern and Fresno counties and in Ventura, Santa Barbara, and San Luis Obispo counties.

It seems that the railroads intended to raise rates on agricultural implements from Stockton to Portland, for the Holt Mfg Co. has entered a vigorous protest.

The State Railroad Commission is to hold an investigation of the Southern Pacific rates on its coast and Sacramento valley lines on Nov. 27.

The golden spike celebrating passage of the first train to Eureka was driven Oct. 23 amid a great celebration

FARM BUREAU MONTHLY.

The Farm Bureau of Yolo County is putting out a monthly sheet in which the various units make short reports. Characteristic of these reports is the expression "interesting and valuable points were brought out." This shows the value of the meetings, but doesn't extend that value to the readers of the monthly. Some good points are, however, reported. One unit decided it would be a good thing to break up the plowpan; another that hot asphaltum should be applied to large cuts on trees; another that heifers ought not to be bred under 15 months. The central Bureau also undertakes to operate a free exchange where implements, stock, etc. may be listed with description and price for prospective buyers. The first annual County Farm Bureau Meeting is announced for all day Oct. 30 in Woodland.

BOYS' CLUBS.

Last Saturday the State University campus was dotted with country boys mostly of the agricultural clubs for whose benefit the Flower and Fruit Mart was held there. The winners in the growing contests of the past season started that day on a trip of entertainments and auto tours at various places from here to Washington D. C. and back. It is likely that they will stop at the National Dairy Show and the Chicago Stock Yards. In Philadelphia they will visit Independence Hall and the University of Pennsylvania, Chambers of Commerce and other public bodies and men are making definite plans for the boys.

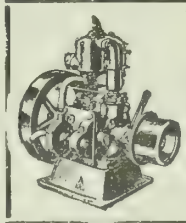
FARM ADVISERS.

Plans are being completed and the necessary steps taken to get farm advisers in Solano, Placer and Fresno counties. Farm advisers have regular schedules on which to visit each unit of the Farm Bureau, where they learn who is seeking advice. The Yolo county adviser visited 68 farms in September on request from those who wanted advice.

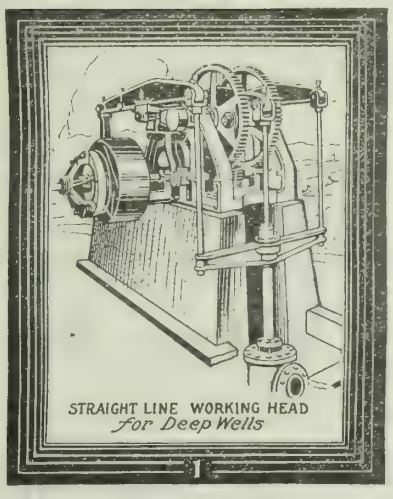
CO-OPERATIVE RAILWAY.

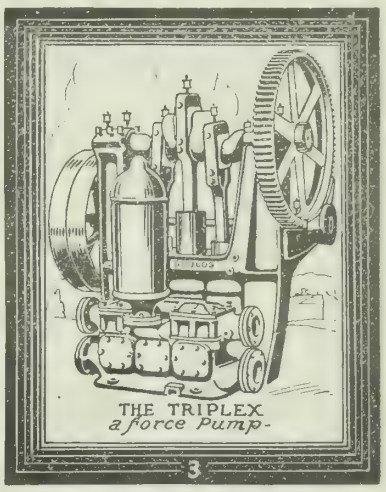
El Dorado county farmers are thinking that if a private electric railway corporation could make enough to pay from the freight they send out, it might be a good idea for them to furnish the capital and build it themselves. The Uno Agricultural Club of Placerville meets Oct. 25 to discuss the proposition.

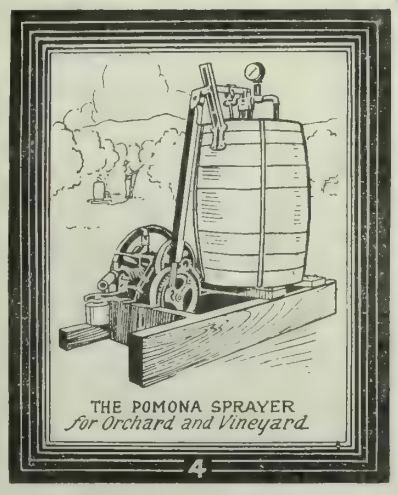
The California Ass'n of Nurserymen held a three-day convention in San Diego last week. Besides problems of tree growing business and papers on the newer fruits such as the fig and avocado, the proposed 8-hour law was discussed. As usual among industries directly allied to agriculture, the proposition received scant favor.



CUSHMAN
Gasoline Engine
for all purposes. The 4-cycle, 4-H. P. only weighs 190 lbs. This is a no-trouble engine. Made in sizes from 4 to 25 H. P. Write for Catalog
Light Weight
THOMAS R. BROWNE,
Stockton, Cal.







WATER

Our idea is for you to get it-

At the least expense.
With the least trouble.
Without interruption.
In the shortest possible time.
Not now and then-but Always.

Our prices and catalog will be sent on request, Just cut out picture you are most interested in or give their numbers.

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~ PUMPS FOR EVERY SERVICE ~
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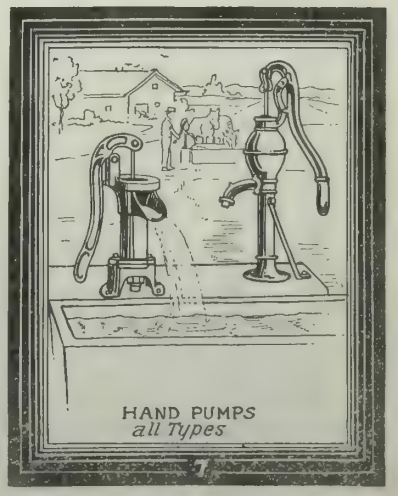


Mechanical Power on the Farm.

BIG MONEY IN TRUCKING FRUIT.

[Written for the PACIFIC RURAL PRESS.]

A fairy tale about trucks for hauling fruit a long distance to market is vouched for by Trapp Brothers of Los Angeles, who ought to know. They paid $3,614 for a 50 horsepower, 4-ton Moreland truck a year ago this summer. They took it about thirty miles out to their Buena Park fruit ranch and hauled a load of fruit and vegetables to town every day, returning with groceries and freight for the villages of Downey, Norwalk, Artesia, Buena Vista, and wayside stops.

During the first week of seven days they paid $24.50 in wages for driving and took in $52 for hauling freight. On July 22 the freight hauling brought in $16.50. They figure the fuel costs about $1 per 24 miles loaded. Thus the total cost of operation per day for the round trip to Los Angeles is $6. They load five or six tons on the truck and make the trip to town in less than two and a half hours, getting to the big Los Angeles public market at just the right time to sell out quick. Loading the freight and delivering it takes till about 4 p. m. At a river bed on the way, where it would worry a good team to pull one and a half tons, "she works right through. Facts! No joshing."

There are several advantages.

As George Trapp says, the fruit arrived after the 30-mile ride to the market in a better condition than it would on a spring wagon three miles to his railroad station at Stanton. To haul as much as a truckload to Stanton would cost about $5, and another $5 from the Los Angeles station to the market. The freight is 11 cents per hundred, or $10 to $12 more. So the transportation would cost about $20 for fruit which the truck carries for $6.

There is no agent at Stanton. The fruit used to be left on the platform til the way freight came. Folks used to break into the crates and boxes and steal the fruit. Handling the package so many times bruised the fruit, too.

With the truck the fruit reached market in far better shape, at the right time for most ready sale. About $14 a load was saved on transportation, and as much as $16.50 was made on the back haul.

But not all the advantage came to Trapp Brothers. The cross-roads stores had previously been unable to get fresh vegetables. Their freight had to be hauled from the station by job teams, which couldn't be procured in time to sell vegetables fresh or to avoid demurrage in many cases. Now it is delivered at their doors fresh from that morning's market at the same cost, or less.

SHARPENING PLOWS.

During the busy season, farmers usually find it necessary to make frequent trips to the nearest blacksmith shop for small repair jobs on broken parts of machinery, sharpening of plow lays and the like.

Where one is located close to such shops, the time consumed in going and coming does not amount to nearly so much as the time spent in waiting for the blacksmith to finish work for someone else who is equally as busy at his farm.

Where the ranch is a long distance from a blacksmith shop, the wasted time is still more pronounced and in either case a small forge and anvil, together with suitable small tools, sometimes means the saving of many hours during the season, when every hour means dollars in the farmer's pockets.

For those that have such outfits the Colorado Agricultural College have sent out a few pointers on plow sharpening in which they state that the principal point to remember in plow work is getting the lay shaped and tempered right. A little mistake along this line will increase the power necessary to pull the plow. In sharpening the lay always draw the edge of the share with the face to the anvil making the bevel underneath. The lay should fit the moldboard as snugly as possible. To tell whether the lay is properly shaped, place it on the floor or bench just as it would rest in the furrow; if the entire cutting edge touches the floor it is set right. The point of the lay should swing a little to the left of the line of the landside. A lay should never be left rough hammered, for if it is it will not scour well because of the numerous little hollows and indentations. First, have a clean fire of well coked coal, keep up a steady blast as if taking a welding heat, put the point of the lay in first, allow it to get nearly red hot, gradually move through the fire to the heel, and continue to pass it back and forward through the fire until there is an even heat from point to heel about an inch back from the edge. When you have the proper heat immerse the edge in water for an instant. Raise the edge or heel out first, allowing the point to remain a second longer because it has more heat than the edge.

Be careful to draw the temper as even a blue as possible, for if it has hard and soft places it will wear into scallops. If there should not be enough heat to do this, hold it over the fire again. A good recipe for tempering plow lays is as follows: 1 lb. Saltpetre, 1 lb. Muriate of Ammonia and 1 lb. Prussiate of Potash. Mix well, heat the steel to a cherry red, and apply the powder lightly. When the oily coating is dry, cool in water.

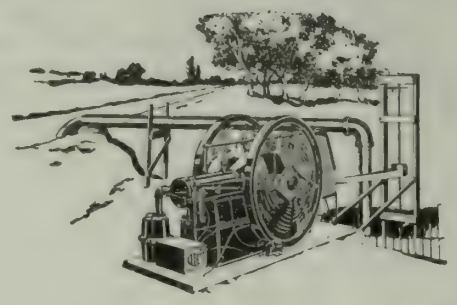
GET PLENTY OF POWER.

At a recent Fremont Demonstration, the sentiment of the Agricultural College Engineers and others was expressed somewhat on this wise, —that no farmer should expect to be able to purchase a successful tractor of the smallest size for less than $1000.00, and that the most suitable size tractor and plow outfit for a 160 acre farm was doubtless a 3 or 4-bottom outfit.

The following extract from an article in the American Thresherman written by Prof. P. S. Rose formerly of N. D. Agricultural College will be suggestive to intending tractor buyers:

"There is a demand among farmers for a small two or three-plow

International Harvester Engines for Irrigating



WHY put up with the half harvests of dry years? Why not put in an irrigating plant of your own?

An irrigating outfit with a dependable I H C engine—Mogul or Titan—does away with all danger from drought. I H C engines are so reliable that you can depend upon having water any time you need it when you use an I H C outfit. Such safety as that is sometimes worth much money.

The same I H C engine will saw the wood, run the feed grinder, separate the cream, bale the hay and do all of the hardest work.

I H C engines are made in sizes from 1 to 50-horse power and in every style suitable for farm work. They run on the cheapest or most convenient fuel—kerosene, gasoline, distillate or alcohol.

The I H C local dealer should be able to show you an I H C engine. If he cannot, write to us for catalogues and information before you buy.

The I H C Line

GRAIN AND HAY MACHINES
Binders, Reapers
Headers, Mowers
Rakes, Stackers
Hay Loaders
Hay Presses
CORN MACHINES
Planters, Pickers
Binders, Cultivators
Ensilage Cutters
Shellers, Shredders
TILLAGE
Peg, Spring-Tooth, and Disk Harrows
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GENERAL LINE
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International Harvester Company of America
(INCORPORATED)
Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

Warm the bath room

with the glowing heat of the

PERFECTION OIL HEATER

Mother and children need it for the bath—father for his morning shave.

Dealers everywhere

Write for booklet, "Warmth in Cold Corners."

Standard Oil Company
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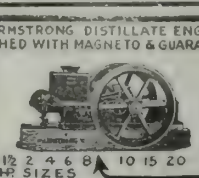
San Francisco

For Best Results Use Pearl Oil

ARMSTRONG DISTILLATE ENGINES ARE FURNISHED WITH MAGNETO & GUARANTEED 5 YRS.



1½ 2 4 6 8 10 15 20 HP SIZES

AN ENGINE OR PUMP SHOULD BE BOUGHT JUST THE SAME AS A HORSE OR COW THE POOR ONES COST LESS DO LESS- DIE SOONER- BUY WITH YOUR EYES OPEN WRITE FOR OUR HANDSOME CATALOG- DON'T WAIT UNTIL YOUR CROP IS DEAD.

MILLER PUMPS ARE UNEQUALED

PUMPS FOR ALL HEADS AND DUTY.

A PUMP OR ENGINE BOUGHT OF US IS GUARANTEED

NORMAN B. MILLER CO. SAN FRANCISCO
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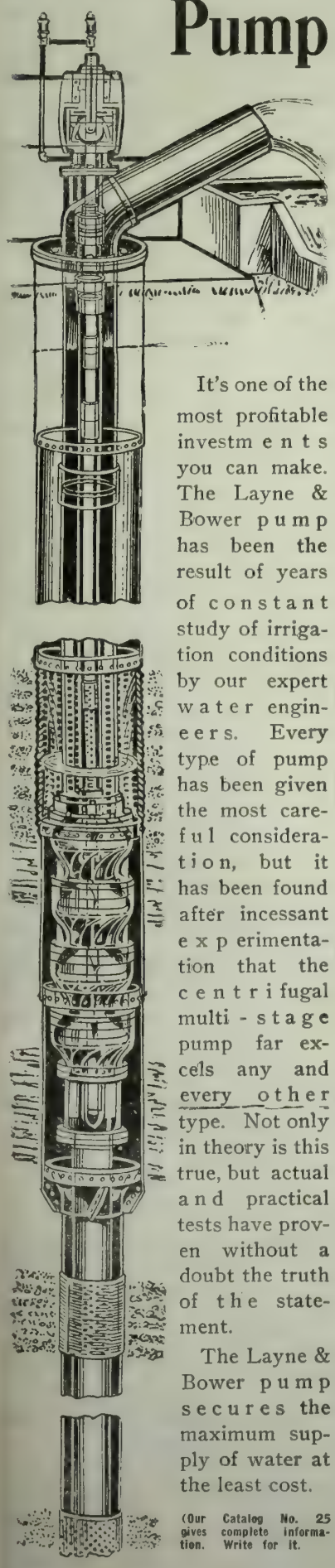
Be on the Safe Side of the Irrigation Question

There should be No Need to Worry About Your Water Supply if You Install the

Layne & Bowler Pump



It's one of the most profitable investments you can make. The Layne & Bower pump has been the result of years of constant study of irrigation conditions by our expert water engineers. Every type of pump has been given the most careful consideration, but it has been found after incessant experimentation that the centrifugal multi-stage pump far excels any and every other type. Not only in theory is this true, but actual and practical tests have proven without a doubt the truth of the statement.

The Layne & Bower pump secures the maximum supply of water at the least cost.

(Our Catalog No. 25 gives complete information. Write for it.

Layne & Bowler Corp.
900-910 Sante Fe Ave.
Los Angeles, Cal.

tractor that can be bought for five or six hundred dollars. They are looking for a tractor that will be a fit companion and running mate for the Ford automobile, but they seem to overlook the fact that in the beginning Ford cars sold for $1,000.00. It was not until the annual production got up to over 100,000 that the price dropped to what they are now willing to pay for a tractor. Moreover, the weight of a tractor, in any event, must be from two and one-half to three times that of a Ford and its cost of manufacture even in large lots will be more. These are facts of production that the average farmer does not know, or if he does know, rarely stops to consider.

"Automobiles are sold for cash, but tractors are sold on long time. The light weight tractor before it comes fully into its own must be sold for cash on delivery or cash within six months.

"Some of the light tractors now on the market are special plowing outfits which are so designed that they are of very little value for anything but plowing. They are not large enough to run the large silage cutters, nor are they very well adapted either for general belt work or for hauling seeders or harrows or other loads. Machines of this class, even at a comparatively low price, will never be able to compete with the general purpose tractor, so far as economy is concerned, though they may have a large sale. What the farmers desire, and what the writer believes will eventually prove the most satisfactory, is a tractor that will pull four plows under ordinary conditions and two under any conditions. It will have enough power to run any farm machine and can be used for any purpose to which a five horse team can be applied. In other words, it should displace eight or ten horses."

MACHINERY NOTES.

Frank Wadleigh's bean-thresher, near Ventura, threshed 2,578 80-pound sacks of beans October 2.

Automobile registrations for September were 3,583, other motor vehicles 577.

Eighteen thousand acres in District 108, near Knight's Landing, Sutter county, are said to have been pumped dry of three feet of water in seven days by one pumping plant. In throwing it over the levee probably a ten-foot head of water was available on the other side. We wonder if this could have been used to generate a little power at high speed to help the pumps.

The Riverside county fair grounds have a new 10-inch artesian well 228 feet deep, flowing about 15 inches, two feet above ground. A motor-driven pump is to force the water to a tank 30 feet high, whence it will be piped all over the 40-acre grounds. A 3-inch main 1,600 feet long will be connected by smaller pipes to all points necessary.

A 12-inch artesian well in Fresno county, 1,100 feet deep, is flowing 100 inches. A dozen such wells are supplying water to 18,000 acres belonging to the San Joaquin Valley Farm Lands Company.

You Can't Overwork the Electric Motor

This threshing outfit on the ranch of the Portland Cement Co., at Cement, California, consists of a little Giant No. 1 thresher, driven by a G-E Motor. It is operating the thresher at a constant speed saving both grain and money. You can't overwork, tire out or fag a

G-E ELECTRIC MOTOR For RANCH AND FARM

The electric motor is the ranchman's most faithful power servant—more reliable than any other form of power and, in the end, a great deal cheaper. There is no expense for repairs or replacements. The only cost is the current and that's getting cheaper and cheaper every day.

Threshing, baling, mixing concrete, sawing cord wood, pumping for irrigation, clipping horses and sheep—in these and a hundred ways the G-E Motor has proven its greater efficiency and economy for ranch operation.

Write today for illustrated booklets about ranching with electricity--they are free.

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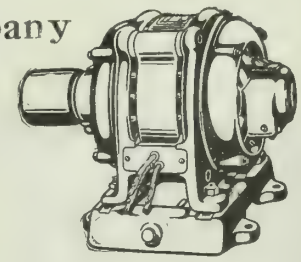

The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

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The KROGH Vertical Pumps

New Type Vertical

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts mean less friction and greater efficiency.

Get our Bulletin No. 78 before deciding on a pump.

KROGH MNFG. CO.

SAN FRANCISCO LOS ANGELES

PIPE

For Every Purpose NEW Threads and Couplings Hot Asphaltum Dipped

2nd Hand and New

PIPE

Screw Casing Fittings and Valves Guaranteed for Pressure

PACIFIC PIPE CO., 4Main and Howard Sts., San Francisco

With the Livestock Men

K. W. Abbott of Milpitas, Santa Clara county, has just purchased 16 head of registered Holsteins from Joe Levy of Manteca, with which further to enlarge his herd of Holsteins.

Believing in the future of the Angora goat, D. W. Thorne of Uno, El Dorado county, has recently purchased in Modoc county, 100 head of grade goats, 100 full blooded ones not registered, and 35 registered goats.

A rumor from Seattle, Washington, states that the British government has purchased 9,000 head of horses for war purposes. The rumor further states that boats have been chartered to transport them to the war zone at an early date.

From all indications the consignment sale of registered Holsteins which is to be held at Hanford, October 28, will be a record breaker so far as buyers and number of animals sold is concerned. Letters from the various breeders who have consigned stock indicate that quality will be an outstanding feature of the sale.

Anthrax and blackleg outbreaks are being reported from many cattle districts, having been found on the ranch of George Bloss Jr. in Merced county, along Butte creek near Gridley, Butte county, and near Hollister, where a ranch hand of Miller and Lux became infected with the disease. The county livestock inspector of Butte county has issued a statement to the effect that blackleg has broken out in that county recently.

With the starting of the rainy season, the need for more silos is much in evidence all over California's alfalfa area, for that last growth of alfalfa which is still uncured or still uncut would make good succulent feed during the winter months, if it could be packed into the silo. We have seen during the past couple of weeks many fields of alfalfa which would yield heavy crops if allowed time to cure, but fall weather here is an uncertain proposition for hay making and silos are the things we must build as an insurance against Nature.

Sheep men with headquarters at Red Bluff have been busy during the past few weeks driving their bands from the mountain ranges down into winter headquarters. They report having had a good season this year and the sheep are in fine shape to start the winter. Train loads of both sheep and cattle may be seen daily in the upper Sacramento valley on their way to market. It would be better if some of this stock was diverted onto the alfalfa ranches in the upper Sacramento to consume some of the alfalfa hay for which a market cannot be secured.

There seems to be a larger demand for breeding sows in the State than the farmers can supply, the price of pork having evidently appealed to imaginations of the back to the farm population. Several companies have started establishments for the breeding of several hundred sows, twice a year. Unless more care is exercised, than is general in such undertakings, it is feared that the price of pork will not be materially affected by their production. Hogs given intelligent care by experienced men are paying well now, but they are a risky thing to go at blindly, especially on such a large scale.

The Imperial Valley Hog Raisers' Association recently had a conference with the supervisors of that county in an effort to have an ordinance passed which will aid in eradicating the hog cholera in that section. The association has already done much good in this respect and it is thought that the time is not far distant when cholera will be pretty thoroughly wiped out of the county. With the natural advantages that farmers in the Imperial valley have at hand for hog raising, their work production should be materially increased, provided they can overcome the cholera, which has been a serious drawback.

The Fisk sale of registered Jerseys conducted at Modesto, October 14, by Ben A. Rhoades of Los Angeles, was entirely successful, from both the sellers' and buyers' standpoints. There were 34 head sold for a total of $6050, the cows averaging $220, heifers $168.35, heifer calves $86.65, and bulls $161.40. Considering that not enough time was allowed for the getting out of a catalog, the prices received speak very well for the quality of the herd and the ability of Mr. Rhoades as a salesman. A large portion of the stock went to Stanislaus county dairymen.

It is pretty generally conceded that the one thing which would help both the small dairyman and breeder of purebreds most at this time, is some system of community breeding. As with all other new ideas however, farmers need some one to go among them to arouse enthusiasm. To secure such a man would require a small expenditure for traveling expenses, etc., but it would appear that the breed associations of this State could well afford to donate enough money to carry on such a campaign. N. H. Locke believes such a plan could be worked out, and he will confer with the directors of California Jersey Cattle Club, on the subject, at their next meeting.

The run of cattle at the Portland Union Stock Yards last week was lighter than for the week preceding, the steer market closing about 15 cents higher. Cows and heifers were weak, all other classes being steady. The hog market was distinguished by an advance of five to ten cents, the run for the week being short, although arrivals were of much better quality. Sheep business was steady for the week, an increase in arrivals being noted. Yearling wethers are in excellent demand while lambs declined. Prime lambs sold for $5.85 to $6.00, ewes $4.00 to $4.35, yearlings $5.00 to $5.50 and wethers $4.75 to $5.40.

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GOMBAULT'S
CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all Lunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Live Stock Directory

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DAIRY CATTLE

HOLSTEINS WANTED—Want heifer calves or yearlings, registered or grades, in exchange for gilt-edge alfalfa in Tulare County. Will make liberal deal, but stock must be well-bred, nicely marked, fine type, healthy and vigorous, and from heavy producers. R. H. Whitten, R. 5, Box 646, Los Angeles, Cal.

FOR SALE—Copa-de-Oro Rauwerd Paul King DeKol. Winner of 3rd prize at Kings County Fair, 1914, being placed next to Toreno Korndyke, owned by Morris & Sons, who won the Grand Champion bull at the State Fair. This animal will do credit to any herd. For further information write Wm. H. Smith, R. 4, Hanford.

FOR SALE—HOLSTEIN-FRIESIAN BULL—Nonesuch Pondyke No. 90771. Born April 20, 1911. Tuberculine tested. Price $350.00 at Alfarata Ranch, Merced, Cal. Address, C. E. Childs, 909 Cowper St., Palo Alto, Cal.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

TEN REGISTERED HOLSTEIN COWS for sale. Young and many with big records. Also a few well-bred heifers and bulls up to nine months old. K. W. Abbott, Milpitas, Cal.

PURE-BRED Duroc-Jersey Swine. Prize winners. Limited number only. $10 each F. O. B. Western Hog and Land Syndicate, 919 Hearst Bldg., San Francisco.

AYRSHIRES For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

ROYAL JERSEY HERD Offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers & Merchants' National Bank.

REGISTERED HOLSTEINS—Young bulls sired by King of Riverside and Lakeside Model Prince from A. R. O. dams. J. H. Harlan Co., Woodland.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal. —High-class thoroughbred Holstein bulls for sale Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I NOW HAVE to offer 5 Holstein heifers, sired by a son of King of the Pontiacs and by a grandson. Address J. W. Benoit, Route 2, Modesto, Cal.

FOR SALE—Well-bred Brown Swiss Bull, 3 years old. Price, $150. True to type in size and color. Ingleside Farm, Knights Landing, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

CREAM CUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Modesto, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

HOLSTEINS—Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

REG. HOLSTEINS — Bull calves. Julian-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. B. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAllister & Son, Chino, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

SWINE

BERKSHIRES—Bred for size, bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder. "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

REGISTERED DUROC-JERSEYS—No better anywhere Boars, sows, and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

REGISTERED POLAND-CHINA HOGS—Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

BERKSHIRES REGISTERED—Young boars and bred sows and pigs of all ages. Brae Bourne Ranch, R. 3, Box 69, Santa Rosa, Cal.

BERKSHIRES REGISTERED—Boars and sows ready for delivery October 30th. G. Casey, Box 7, King Road, San Jose, Cal.

POLAND CHINA PIGS—Boars and sows for breeding stock, eligible to registration. R. J. Miller, Lathrop, Cal.

DUROC-JERSEYS—Prize Winning Boars and young stock for sale. J. K. Fraser, Denair, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

BERKSHIRES—Utility and choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

POLAND-CHINAS. Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

DUROC BOARS—Good, thrifty May pigs, $15 each. Registered stock. A. L. Moriarty, Patterson, Cal.

BERKSHIRES—Weanling males $10. Females, $12. J. M. Bomberger, Modesto, Cal.

POLAND CHINAS—Prize winners. Money makers. W. Bernstein Hanford, Cal.

REGISTERED O. I. C. SWINE—Special sale of young sows. C. D. Conway, Lakeport, Cal.

DUROCS from first-prize winners State Fair, $15.00 up. Ed. E. Johnson, Turlock, Cal.

HOPLAND STOCK FARM—Registered Berkshires Prices on application. Hopland, Cal.

POLAND-CHINAS; large type The Browning Stock Farm W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

DUROC-JERSEY BOARS—Weanlings. Lindquist Bros. Turlock, Cal.

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I will sell this horse cheap if sold soon. For further particulars write me or come and see the horse.
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149 California Street, San Francisco

Veterinary Queries and Replies

[Answered by Dr. Robert Boyd of San Francisco Veterinary College.]

HOG CHOLERA?

To the Editor: Some young hogs I recently bought eat very little and some have a looseness of the bowels. They do not move around much and have some cough.—J. S., Coyote.

[I would have a qualified veterinarian to see the animals as soon as possible as the symptoms you describe closely resemble those of hog cholera, and before this appears some will probably have died.]

SHOULDER LAMENESS.

To the Editor: I have a nine-year-old mare that is very lame in both shoulders. She has never done any hard work, but has stood on the barn floor a great deal. Sometimes she gets a little better and then back to her old lameness again.—W. W. B., Kelseyville.

[The lameness you describe may be due to rheumatism, but shoulder lameness, especially of both shoulders, is very hard to diagnose unless a man has been trained in diagnosis of lameness. I would strongly advise you to have the animal examined by a qualified veterinarian, as from what you say the animal may be really suffering from hoof lameness.]

INFECTIOUS SCOURS.

To the Editor: I have a valuable heifer calf about one month old. She has never drunk like she was thirsty, sometimes taking very little. Passage is white and doughy looking and she sometimes has scours. Calf is very thin. What treatment would you advise?—F. W., San Luis Obispo.

[This is "white scour" or Dysenteria Neonatorum and is an acute contagious infectious disease. It is caused by one of the virulent forms of the bacillus coli communis. The treatment consists of first a purge (mild acting such as castor oil) and after the purgative action appears, mucilaginous medicines such as decoctions of linseed, barley, or oats. Each case would have to be treated according to symptoms, however, and I would strongly advise you to call a qualified man to see the calf. There are certain preventive measures, which should be taken if you have other stock.]

HOG BREATHES HARD.

To the Editor: I have a sow that breathes with difficulty, the trouble apparently being in her nose. Could you suggest a remedy? She has been running in an alfalfa pasture for some time. What are the symptoms of hog cholera? Is there any sure method of detecting it in the early stage of the disease?—J. S. D., Lemon Cove.

[It would be impossible to diagnose this case without an examination. It may, however, be due to nasal polypi, which would have to be removed surgically. P. T. D. The first symptoms of hog cholera are rather difficult to distinguish, being very similar to those of ptomain poisoning. The animals become dull and generally there is either diarrhoea or obstinate constipation. There may also be purple patches on the skin. There are, however, several forms of hog cholera, and in no case can a positive diagnosis be made except on post mortem lesions. If hog cholera is prevalent in your locality, or if you have lately imported any hogs, any symptoms of sickness in the herd should be looked on with suspicion.]

SCOURS OF MARE.

To the Editor: What will stop my mare from scouring? She is quite alright when I start for a drive for the first two miles. Then she starts to scour. She has been doing this a month or more. I feed her fairly good oat hay alone. Her stomach is large and looks as though she is in foal, but she hasn't been near a horse.—H. B. H., Petaluma.

[This is due to indigestion. First give mare a mild physic of raw linseed oil, one pint, and one ounce oil of turpentine to be given on an empty stomach. Care must be taken in administration of a drench to horses. Do not try to hurry the operation. When bowels have returned to normal, which should be 12 to 16 hours after drench commences to act, give one of the following powders twice daily in feed for about two weeks: Sodium bicarbonate, 3 oz.; powdered nux vomica, 2 drams; powdered gentian root, 1½ oz.; powdered anise, 2 oz. Mix and divide into six powders. Oat hay is rather laxative feed for horses used for fast work, more especially if cut a little green. You would find you would get better results from timothy hay and grain if possible to procure it.]

LION LOSES APPETITE.

To the Editor: A young lion six months old was fat and in good condition a few weeks ago. Now he has lost weight, has little appetite and seems constipated.—T. G., Napa.

[This is probably indigestion. You must remember the natural food of all carnivora is raw flesh, and under natural conditions such animals would feed at most once in twenty-four hours. For constipation try the following: Syrup of buckthorn and castor oil, equal parts. If animal weighs say forty pounds give three tablespoonfuls once a day until the bowels become regular. If this does not loosen bowels after second day increase dose one tablespoonful. You might try the following tonic when bowels have become normal: Liquor strychnine (B. P.) thirty-six minims, dilute hydrochloric acid, 2 drams, tincture calumba six drams, syrup of orange, one and one-half ounces, water to six ounces. Give a tablespoonful once daily. I would advise you to keep children away as such animals are liable to be uncertain in temper, especially when suffering from indigestion.]

MISPRINT MANGE AND RABIES.

In the issue of of October 3, under the head "Mange on Fox Terrier," the words "liquid petroleum," which is coal oil, should be "liquid petrolatum." This is the equivalent official of vaseline which is a proprietary name. Use of petroleum in this formula would be a vesicant or blistering application and totally alters the prescription.

In the rabies article "drunk" should read "dumb." In the issue October 10, "lampers," which is the common term among horsemen, should read correctly "lampas."

The Government land within the National Forests in California amounts to 20,000,000 acres. The area in need of protection is at least double this. At present the Forest Service has to protect not only the twenty million acres of government land, but a good share of the balance—and this with a maximum summer force of less than 900 men. Naturally, under these circumstances, the forests are not being protected with the degree of intensiveness that they deserve.

Newman Bros.' Ranch, Elk Grove, Cal.

JUDGMENT based on EXPERIENCE is a sure GUIDE to success.

READ AND PROFIT BY THE FOLLOWING:

Poppy Ridge, Elk Grove, Sept. 26, 1914.

DE LAVAL DAIRY SUPPLY CO.

Are we pleased with our silo? We certainly are, and here are some of the reasons why.

It is made out of the right stuff, and in the right way for this climate. As you know, ours is the one you had at the State Fair in '13. It was moved down to the ranch and put up about October 1st. Stood empty all winter, was filled in April with alfalfa, empty by July, and filled again in Sptember with corn. The hoops have never been touched. There isn't a check in it, nor has a single seam started.

We feed alfalfa silage three months in place of cutting and feeding green alfalfa every day. The cows milked just as well, we saved on labor, and the silo enabled us to turn into the best of feed a first cutting that as hay would not have been worth handling.

We figure that the silo, by enabling us to preserve corn in succulent condition for winter feeding, will so balance our ration that it will not be necessary to buy any concentrates to keep our herd up to their best. Even if it cut our bill for concentrates 50 per cent the silo will pay for itself this year.

It preserves the feed perfectly. We did not lose a particle of silage from mould even next to the doors.

We expect to fill it next spring with barley and vetch and again in the fall with corn, thus getting two crops in one season from the same land. We have not been able to do this before to advantage except with alfalfa. If this plan is carried out we shall need another silo for first crop alfalfa, and we serve notice now that the Ideal Green Feed Silo will be it.

Very truly yours,

NEWMAN BROS

WRITE FOR CATALOGUE B

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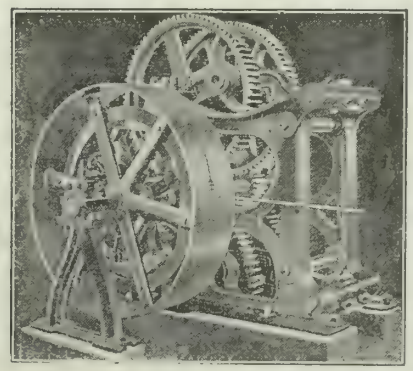

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Our herd is Cholera Immune, the only immune Berkshire herd in the State.

Five herd boars in use and they are second to none on the coast. Our sows are of equal merit.

We have at present some 300 Berkshires and we know that we can supply what you want. Write us or call.

Oak Grove Dairy Farm

H. G. ARMSTRONG, Prop. WOODLAND, CAL.

Inspection of Dairy Herds

By State Veterinarian, Dr. Chas. Keane, at Milk Conference, Berkeley.

A review of analysis of past efforts to secure adequate dairy legislation in the State brings back to light one very salient feature; namely, the sharply drawn division of opinion between those who represent the consumer and those representing the producer in the provisions such legislation should include. This is particularly true concerning the portions of such regulations proposed for the elimination of diseased animals from the milking herds. Up to date no common ground has been found wherein all interested could stand, but on the contrary bitterness has been engendered, and all parties have undoubtedly suffered therefrom.

In seeking the principal reason for this condition of affairs one apparently does not have to look far. The dairymen who want to produce clean milk, and are not opposed to intelligent regulation, are in the majority; the creamery men must have clean milk from which to produce butter that will command top prices; while the desire of the consumer does not require mention. Therefore other reasons for this division of opinion must be sought. While in my opinion several such reasons exist, the one which stands out so prominently and, so far as the subject matter of this address is concerned, is the most important, is bovine tuberculosis and the tuberculin test. Here is where the fight begins and ends, and will continue to do so in the future, unless we can make the subject of tuberculosis and the tuberculin test an incident to, rather than the pivot around which the whole subject of proposed sanitary dairy legislation must revolve. In saying this I do not wish to be considered as minimizing the importance attached to the tuberculin test, but in treating this subject from the viewpoint of state control, its general application, is, for well known reasons, impossible, and its advocation will continue to result only in drawn battles.

If I had the final say today, I would amend the present dairy law of California a little. It is a good law, and with the meager facilities afforded, is well administered by the State Dairy Bureau. If adequate machinery were given the Bureau for the general enforcement of this law, I have no doubt but that the improvement in our dairy industry would be equal to any that could be carried out under a different law.

There are, however, two important amendments to this law that I would suggest, namely:

First: a provision whereby duplication of inspections by State, County and City inspectors could be constitutionally eliminated, thereby providing against the waste of public funds by such methods, as well as protecting the dairymen from the unnecessary annoyance, expense and trouble, in endeavoring to comply with different standards or different interpretations of the same standard of inspection.

The other material defect in our present law is that it does not provide for proper inspection of the animals for abnormal conditions or diseases which might be inimical to human health. The existing law refers to this subject only three times: In section One where it provides that no milk produced from cows affected by any disease, or from cows within five days after or fifteen days preceding parturition, shall be sold; Section 29 provides that the milk from cows obtained within fifteen days before and five days after calving must be excluded; and section 43 provides that whenever an agent or inspector of the Bureau shall discover the existence of, or has reason to believe a contagious or infectious disease exists among dairy cattle, the same shall be immediately reported to the State Veterinarian. The agents of the Bureau enforce this latter provision to the best of their ability, but this inspection for abnormal conditions and disease should be made by trained veterinarians whose special fitness for such work should be determined through competitive examinations in veterinary pathology. The large cities of this country and some of the states recognize this fact; and inspection by veterinarians for the exclusion of diseased animals from the dairy herds has been followed in European countries for years. This method of veterinary inspection has been adopted by at least two cities in California, Oakland and San Francisco, with signal success.

The elimination of only the cows which are affected with communicable diseases does not constitute a thorough animal inspection. Cows suffer from other pathological conditions which often render milk harmful for human consumption. I refer to the pus infections, as well as sporadic diseases, most important of which in the dairy herd, from a sanitary viewpoint, are the various inflammations of the udder. Also abnormal sequelae to parturition, etc. Regulations should provide that cows so affected must be separated from the milking herd until recovery. Regulations should also provide against the use of milk from cows found affected with undetermined illness, evidenced by such symptoms as abnormal temeprature, extreme emaciation, malaise, etc.

While such regulations would probably be broad enough to include animals affected with communicable diseases, I would suggest, however, that such diseases as tuberculosis, anthrax, and open and advanced cases of actinomycosis, be specifically mentioned, and in addition, the inspection for tuberculosis be limited, as far as the removal of the animal from the dairy is concerned, to those cases where the disease is evident after a physical examination only. At the present time this is, in my opinion, all that we may expect and while the elimination of only physical cases of tuberculosis from the dairy herd may not be all that is desired, it is, however, a step forward.

A subscriber writes that tule protectors (which are scarce) for young trees prevent growth of suckers from seedling roots.

Low vitality of tree or animal, from whatever cause, invites disease.

"Full milk pails all thru the dry season, while neighbor's cows are dry."

—that's what O. H. Holmes, Clatskanie, Oregon, writes as his experience in feeding Larrowe's Dried Beet Pulp.

It is the one best feed for dairy cows, both as a milk producer and conditioner. Fine also for horses, hogs, poultry and other live stock. Larrowe's Dried Beet Pulp can be had either plain or with molasses. Some prefer the molasses-dried on account of its sweetness, but stock will eat either with great relish.

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Dairymen's Meeting.

[Written for the PACIFIC RURAL PRESS.]

Meetings of livestock men are always of interest to any one interested in such subjects as usually arise at such meetings, and the annual conventions of the California Creamery Operators' Association and the California State Dairymen's Association at Modesto last week were no exceptions to the rule.

The first day of the meetings was devoted to subjects of interest to creamery operators, most of the speakers confining themselves to papers and discussions relative to the improvement of butter standards in this State, and at times the speakers so thoroughly disagreed that the audience was furnished all sides of the subjects for its consideration.

Due to the fact that politics have been injected into the work of the association by some members, this subject was the foundation for a great deal of talk, and was even entered into by one political candidate and one of his supporters.

That the association, as a whole, do not, however, approve of the steps that have formerly been taken in this direction, and do not intend to countenance any such work in the future, was shown by the resolution committee, and later by the vote of the association, to the effect that the association disown any action that may have been taken by certain members in the past as having been official, and resolved that as the association is not in any way a political organization, no official action be taken either for candidates or against proposed constitutional amendments.

The association went on record as being opposed to the lowering of butter standards by the Los Angeles Wholesale Produce Exchange, declaring that at the present time, with foreign competition, our standards must be bettered rather than lowered if the dairy industry of the State is to progress as it should.

Due to the agitation favoring the establishing of a State department of agriculture, which would include the present efficient State Dairy Bureau, a resolution was passed asking the framers of the bill to omit the State Dairy Bureau from the departments which are proposed to be included. This action was taken as it was the belief of those present that no improvement could be made in the work of this bureau by incorporating it in the proposed department. The association expressed itself as being well pleased with the past work of the bureau and its officers.

At the request of the exposition directors, it was decided to hold next year's convention in San Francisco, but not in connection with any other organization, as it was thought that better work could be done by holding separate meetings of the various associations and at different times.

The Dairymen's Association held sway on Friday, an interesting and educational program having been mapped out, which was followed as closely as time would permit of.

What might be called strictly dairy legislation was noticeable by its absence as a topic of discussion, the only reference which was made to the subject being taken up by Mrs. A. E. Graupner, representing the consumers and by S. A. W. Carver on "Dairy Legislation."

The first-named speaker told of the efforts which were being made by the consumers to come to some common agreement with the dairymen on the subject of legislation, and it was the unanimous opinion of those present that the dairymen and the consumers now want practically the same things and are ready to work together instead of against each other, as in past instances.

The one regrettable thing about the dairymen's meeting was that there were not more authorized members present, the count of votes while the resolutions were being voted on showing that, with the exception of the officers and those submitting the resolutions, there were only a few present who had a vote, although there were many present who were active members and should have a hand in voting on all measures which are of importance to the dairy industry, especially in view of the fact that each dairyman in the State is being asked to support the present organization, both morally and financially.

The Creamery Operators elected W. H. Roussel President, F. H. Daniels Vice-President, and Leon Davis Secretary. J. W. Guiberson was reelected President of the Dairymen's Association, and S. A. W. Carver Secretary.

HORSE SALE PLANS.

[Written for the PACIFIC RURAL PRESS.]

The directors of the California Draft Horse Breeders' Association decided at a recent meeting of the directors held at Davis to hold the proposed purebred consignment sale at Davis, the latter part of January or the first of February.

In order to further the interests of this sale, letters have been sent to the known breeders in the State, asking them the number of animals which they expect to consign, and it is thought that in a short time replies will commence to come in.

It is interesting to know that the directors have decided to accept only such animals for sale purposes as are thoroughly sound in every respect, and in order to insure the buyer that such is the case a reliable veterinarian will examine each horse before the sale. In cases of serviceable stallions or mares that have been bred, and which are not then in foal, the owners of such animals will be compelled to show positive proof that they are good and regular breeders.

All of these stipulations are being incorporated in the sale rules in order to protect the prospective purchaser and distribute a large number of absolutely sound mares and stallions over the State and in this way build up the horse industry of the State on to a higher basis than it has been in the past. At it was for this reason that the horse breeders perfected this organization, the present plan should meet with wide approval among both breeders and prospective breeders of purebred horses.

Johnnie (very tired): "Auntie, my eyelids won't stand up any longer.—Journal Amusement.

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100 REGISTERED HOLSTEINS 100

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Range Raised Young Shorthorn Bulls for Sale. Single or carload lots.

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I can place in California

100 REGISTERED SHORTHORNS AND 100 REGISTERED HEREFORD BULLS

All of serviceable age for the coming year's use. Miller & Lux, Mayo Newhall and Vanderlynn Stow have had three cars of these bulls shipped to them to be used next spring. Any one in the market can inquire of any of the above mentioned gentlemen regarding their quality and individuality. They are well bred, carry a great amount of natural flesh and are large for their age. These bulls can be kept cheaper here than in the East, as corn is now selling at 75 cents per bushel in Iowa. Buy now and save a large corn bill. Address

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Poultry for Profit

[Written for the PACIFIC RURAL PRESS by Susan Swayssgood, Pomona, Cal.]

It is not possible to pick birds off the range now and win with them, they must be gotten ready and made fit to look at. Condition counts quite a lot in winning; and condition is, first, having the bird in just enough flesh to be fit, don't spell it fat, because a fat bird is not in condition; but simply fit. This means that the flesh must be firm and in the right amount. Condition also means being well groomed, clean, and nicely manicured, with shining feathers. Good condition and being well trained goes a long way with judges, who are only human.

The training should be well under way more than a month before the show, as it takes time to teach a bird how to stand and not to be afraid of strangers. Give them bits of meat or anything that they like and coax them toward the front of the pens, then take a cane and stroke them along the back. Night is the best time to commence with them, then as a rule birds are more docile.

When you get them used to the stick take them out nights and handle them, then in the day time until they get used to it.

But before you go to all this trouble, be sure that you have something good to work with. There is no satisfaction in working with poor material; so if you have no Standard, get one and study the good points of the breed or breeds you are interested in, then go over your yards and pick out the best you have.

I always find good sound grain the very best feed for conditioning show birds; they will stand confinement longer than if fed a lot of soft feeds and mushy stuff. A little of the sausage meat called frankfurter and sood grain is a diet that puts them in the pink of condition. One time I fed corn to a cockerel that had plenty of bone but was off in flesh, and that cockerel gained at the rate of one pound a week. And this is an important thing to know so that you can measure the time needed for getting the birds in condition. Standard birds must reach the weight allowed, some breeds can go over weight without being cut; but none should go under weight.

When the flesh on the breast bone is even with the bone itself then a bird is in fine condition so far as flesh is concerned, and if he has been taken care of, his feathers should be all right. But at this time of year very few birds will be in good feather; it is a little too early. Still, as nearly all are in the same incomplete state of feathering, owing to the molt, no one should be afraid to try out their birds on that account.

In smooth legged varieties be sure to examine the shanks for stubs; and the combs of all varieties must be free from defects, as these are the first thing a judge looks for. Even old hands are caught sometimes, because they have not been vigilant. It is a good plan to grease the legs of male birds about once in two weeks during the hot summer months, as this keeps them soft and toward show time the scales will come off better. Dry scales will not separate without much work on your part, and sometimes making the bird's legs bleed, so that it pays to plan ahead. If they have been neglected, take time to do it now, without delay, in fact breeding birds should be greased or the legs may get so dry they hurt. Sometimes birds that are on board floors get corns and bumble foot and they must be taken care of for health's sake, but don't attempt to exhibit them.

RAISING TURKEYS.

There is a fortune waiting for the man or woman who will get up something with a good sounding name, it might be Fee-fo-fum, or any old thing if it caught the public's fancy as a cure-all for raising chicks and turkeys. The trouble with most people is that they want to beat nature and the old dame won't let them. I have a neighbor, an eastern woman who came here for her health and she thought it would be fine to write back and tell her old friends that she was so well as to be able to raise turkeys. I told her to let them alone and raise what chickens she could because she did not have room for turkeys. But as my advice was given free it was not worth the price, and of course was rejected. She borrowed hens from another neighbor and bought turkey eggs to set four hens, hatched out thirty-seven, and at this writing I see that she has three left. In the first place all the turkeys in this State are related more or less, and to get new blood you must send east. I would not advise buying eggs but get a good Tom from as far east as possible where the climate is cold. Put him with native hens and give the poults range, keep free from lice and do not over-feed and you can raise turkeys. This is a good country for turkeys, but they won't stand inbreeding or confinement.

CHEESY EYES.

We have once in a while a chicken mostly half grown that swells up in the eyes and closes them; we can squeeze out a thick white cheese stuff. What is the matter with them? It does not seem to be catching. I usually kill them, or most of them, as that is the cheapest way to doctor them. Please tell me what is the trouble and cure.—E. L., Winton.

Mrs. Annie T. of Chico sends in a similar query about turkeys, four or five months old.

[I don't see how you have kept your flock from catching roup, when you have some blind with it. That is a case of good old roup sure enough. I think the reason they have not all caught it must be the hatchet cure. That is the best remedy, but I differ from you as to the price. It is a rather expensive cure. The first thing is to find out how it first came in the flock; it may be from sleeping near a draft of air that strikes some few birds on the head, or if it occurs in half grown birds it is most likely a case of crowding too many in a place at night, then coming out early in a morning while yet wet and taking cold. Chickens do not sweat as some think, but the breath of an overcrowded lot of chicks causes them to be wet and in that condition they easily take cold. Look up your sleeping apartments, as that is most likely where the trouble comes in.

Give the whole flock a physic, either Epsom salts or castor oil in a little moist mash. Allow a teaspoonful of either for large hens and half the quantity for young ones and mix thoroughly in the mash at evening. Put a few tablespoonfuls of coal oil in the drinking water, and this will cleanse the nostrils and eyes. If trouble is not cured take them one by one and dip the heads, eyes and all, in peroxide of hydrogen; this is humane and will cure bad cases.]

COUGHING PULLETS.

Kindly inform me what to do for a pullet that coughs all the time but in other ways seems to be all right, eats well and has red comb.—F. M. S., Vallejo.

[There may be something in the pullet's throat. I have seen ground bone stick in fowls' throats and stay there until they got so thin they could hardly walk. Better examine it; and if there is any obstruction, take it out with a small pair of pliers. If the windpipe is clear, give a mixture of eucalyptus and olive oil, a few drops several times a day, or any good cough remedy you happen to have. If the trouble was any deeper than the windpipe, the comb would not be red, neither would the pullet eat well. The comb is the health indicator; when that is all right nothing is very serious. We should look for little ailments where they are localized.]

RAISING NINETY PER CENT OF CHICKS.

"How can I raise 90 to 95 per cent of the chicks I hatch?"

[I am free to say that this man is very modest; he does not ask much, but what he does ask is like the boy said of the butter, "plenty of it such as it is." How to raise 90 to 95 per cent of chicks is not answerable unless a person knew the stock the chicks came from and the man behind them. The most vital things in chick raising are first to see that they are not fed too soon after hatching, then fed right at regular times; kept free from colds, clean and comfortable, and have green feed. I have raised 100 per cent of chicks by hand, but could never trust hens to do quite so well.]

WHITE OR BROWN LEGHORNS.

Please tell me the relative values of the Leghorn family. Do the Brown lay as well as the White, and can exhibition specimens be bred as easily?—Mrs. K. G., and E. L., Winton.

The brown Leghorn is quite as good a layer as the white, but some strains lay a smaller egg. Most people keep whites because of the community advantages, and some think they stand the hot climate better. No, exhibition specimens are not so easy to raise; they must be double mated, and that is true of all parti-colored birds, and of some solid colored. Brown Leghorns are beautiful birds, when properly mated.

WHITE COMB.

What is the cause of a cockerel's comb and face turning white? Can you tell me the cause and remedy for same?—J. M., Porterville.

[This is clearly a case of "white comb," and is caused by a parasite something like the small parasite in scaly leg. If you notice closely you will find a fine white powdery scurf that is a diminutive scale. Bathe the face and comb with a two per cent solution of Pearson's creolin. Dry, and apply an ointment made of carbolated vaseline and one per cent iodoform. As it is infectious it would be better if you could segregate the bird so affected.]

WRY TAIL.

I have a hen with a wry tail, and as she is all I got from a setting of costly eggs I sent east for, hate to lose her. Do you think she would breed that kind of chicks?—S. L. B.

[It is too bad a defect to take any risk with. Better lose her than raise a lot affected with the same defect. It is a risk, though it may not be the pullet's fault. Sometimes wry tails are caused by cramped quarters or rubbing against something continually. If it is from these causes then it would not be so much of a risk, but if it is a natural wry tail I certainly would not breed from her no matter what the cost.]

MASH.

One subscriber asks for a formula for a home-made mash. Now it is only about three weeks ago that a formula was printed and it is not fair to others to keep using space for repetition. For a small flock mix the following: Bran, 50 pounds; shorts, 25 pounds; cornmeal, 20 pounds; rolled barley, 10 pounds; beef scrap, 10 pounds; charcoal, 2 pounds; salt, half pound; alfalfa, 25 pounds. Mix all together as well as possible and feed either dry or moist.

LEGHORNS FOR THE FOOT-HILLS

To the Editor: Will white Leghorn chickens prove profitable egg producers at an elevation of 2000 feet in the Fresno county Sierra foothills?—W. H. R., Dunlap.

[One of the strong points of the Petaluma district which is almost exclusively White Leghorn, is the cooling effect of the regular afternoon breeze all through summer. Another strong point is its good drainage in winter. You probably have both the moderate summer and the good drainage, with the added advantage of wild forage. We believe the breed that has made itself a national reputation under Petaluma conditions will be very profitable egg-machines for you.—Editor.]

FEATHERS AND PERCHES.

Do Black Minorcas (pure) when young chickens have white or gray feathers? Are flat perches, four to six inches wide, as good as round perches?

[All black chicks, of whatsoever breed, are liable to have white and gray feathers. I have seen some of the very best bred Black Minorcas in the world that had white feathers come in up to the last molt, then the last feathers would be black. Perches four to six inches wide are not nearly so comfortable as those two inches wide. The very best perch is Oregon pine 2x2 and the edges trimmed making it near round, a hen can then grasp the perch because its feet naturally form a curve when she goes to roost. A perch so wide as six inches might be a place to sit on but a hen would never feel quite safe because she could not grasp it to hold herself if it were shaking.]

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POULTRY NOTES.

Next Monday begins the fourth annual exhibition of the San Joaquin Poultry Ass'n, at Stockton, to last through Oct. 31. This association being a member of the American Poultry Ass'n, the show will be run under the latest official poultry show rules of the national organization and all prizes will be awarded strictly in accordance with the American Standard of Perfection. Prizes for singles are $3, $1, and 50 cents; for pens, $5, $2, and $1.

The 12,000 hen farm of O. L. Freisinn of Santa Rosa has been sold to W. A. Summerhayes of Berkeley who expects to maintain 30,000 layers here. This immense poultry farm was built up by Mr. Freisinn's industry, and the system worked out to give the hens plenty of room and at the same time economize labor, is worth going far to see.

Prizes for utility birds at the Petaluma Poultry Show Nov. 18-22 will be awarded by Walter Hogan. An annex is being built to hold a display of poultry machinery and supplies. The best display of pet stock will receive a trophy. A grand sweepstakes of $50 will be given the best display to be decided on points.

At the Fresno free market, humane officer E. A. Nichols has ordered that coops must be high enough to allow fowls to stand upright.

A feature of the coming poultry show to be held at the Auditorium, San Francisco, December 8 to 13 will be the yard system of exhibiting birds. This is an innovation on the Pacific Coast and should be of vast benefit to breeders and prospective purchasers. A limit is made of ten birds to a yard, and no one can have more than one yard of a breed. A charge of $4.00 a yard will be made to cover the expenses of feeding and care. While poultry shown in this manner will not compete for prizes, it offers a fine opportunity for the poultry raiser to show to advantage a large number of birds illustrative of certain types at a very small cost. At the same time it gives prospective buyers a better chance to size up individual birds of a breed, as it is much easier to make comparisons when there are several in a bunch than when alone in a pen.

POULTRY SHOW DATES.

San Joaquin Poultry Association at Stockton, Oct. 28-31. W. H. Mackay, Sec'y.

Sacramento, Nov. 2-7. C. A. Wilkins, Sec'y.

Santa Cruz, Nov. 11-14. E. J. Harran, Sec'y.

San Mateo County Poultry Association, at Redwood, Nov. 12-15, Fred West, Burlingame, Sec'y.

Willows, Nov. 18-21. O. F. Schuchard, Sec'y.

Petaluma, Nov. 18-22. Thos. McGuire, Sec'y.

Oakland, Nov. 24-29. C. G. Hinds, Sec'y.

Pasadena, Dec. 1-5. M. D. Cartwright, Sec'y.

Modesto, Dec. 2-5. A. D. Roberts, Sec'y.

San Francisco, Dec. 8-13. E. J. Talbott.

Porterville, Dec. 15-17. A. D. Fawcett, Sec'y.

Phoenix, Ariz., Dec. 23-26. State Fair Sec'y.

Los Angeles, Jan. 6-12. H. H. Mumford, South Pasadena, Sec'y.

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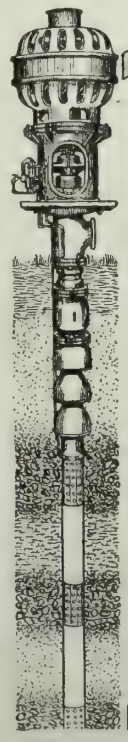

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Equal talents in each you'll find;
Mischief loving, to sport inclined,
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All these, and more, are here combined
In my two boys.

One of these boys your patience tries;
The faults he has you must despise;
Be he handsome, well-clothed or wise,
Tall, fat or gaunt;
It is the one who always cries:
"I can't! I can't!"

Instead of doing with his might
All that he can before the night,
He'll try to push it out of sight—
To sulk and shirk;
One-half the force expended right
Would do his work.

The other is a little man
Who lays his work out by a plan,
Thus getting done all that he can
As moments fly;
He has no other motto than:
"I'll try! I'll try!"

In heat or cold, in shade or sun,
All that he does is promptly done;
But when it's o'er and leisure won
He plays his best;
This is the boy that has more fun
Than all the rest.

Which will you be, my bonnie lad?
The friends of one are often sad,
The other makes his always glad
By loving work;
So choose the good and shun the bad,
And never shirk.

WHEN THE PARTITION FELL.

"O mother," Vera cried eagerly, "please may I feed Mrs. White and Mrs. Brown all by myself this morning?"

Mrs. Brooks looked doubtful. "They live in such a shaky house," she said, "I'm afraid you'll let the partition fall when you lift up the roof."

Vera promised to be very, very careful.

"All right; run along then," said her mother. "The poor things are sure to be hungry."

With a dish full of meal and shorts in one hand and a pail of water in the other, Vera hurried away to the queer little house where Mrs. White and Mrs. Brown lived with their families, one of twelve, the other of thirteen chicks; for Mrs. White was a white Leghorn hen, and Mrs. Brown a Rhode Island Red. Their house, as Vera and her mother called it, was an oblong crate, divided into two rooms by a board, and this board was held in place by the two old window-screens which made the roofs.

"Good morning, ladies! good morning, babies!" Vera cried cheerily.

"Come quick! come quick!" urged the "ladies," poking their heads through the crate. "Yip! yip! yip!" echoed the "babies," who were only a week old and could not talk very plainly.

"I will feed you first, Mrs. Brown, for you act the hungriest," Vera said. Very carefully she lifted up a corner of the screen, and threw down haudful after handful of the meal and shorts. Then she rinsed their drinking-dish and filled it with the clean, fresh water from her pail.

"The idea!" exclaimed Vera, as she put the screen back in place, "the very idea of mother's thinking I could not do this! Why, I can do it just as well as she can."

She raised a corner of the other screen to feed Mrs. White. Alas! the shaky board partition slipped, tottered, and fell. Then there was a mix-up. Mrs. White cackled and scolded; but presently she spied the food in Mrs. Brown's house, and, marching straight over the fallen partition, she began helping herself and clucking for her chicks to come and eat. But Mrs. Brown was not a bit neighborly. She rustled up to Mrs. White, and pecked her on the neck.

"Oh, dear!" thought Vera, "they are going to fight. What shall I do?" She was rather ashamed to run for her mother, and, besides, something needed to be done at once, for both the hens were looking very bristly. Vera was afraid to touch them, so she hurriedly took off her apron and flourished it between them. "Shoo! Shoo! Oh, please, shoo!" she cried; and at last she really did succeed in driving the two hens into opposite corners of the crate. Then she put the partition back in place, and sighed.

She sighed because Mrs. Brown had twenty-two chicks and Mrs. White had only three.

"You naughty babies! How am I ever going to tell where you belong?" she said despairingly. "You look so much alike your own mothers can't know you."

That gave her an idea. She would put any nine of the chickens in with Mrs. White, and the hens would never know the difference.

But the chicks knew the difference My, how frightened and homesick some of them were! They just ran around and around, yipping as though their hearts would break.

Vera sighed again, and then she set to work. She caught the discontented chickens one by one, and changed them back and forth until they seemed happy and quite at home. She was very hot and tired, but she put down some food for Mrs. White and gave her fresh water. "Good-bye, ladies! Good-bye, babies!" she said, when everything was done. "I'll tell you one thing: it's lot's easier to think you can do something than it is to do it. But," she added, happily, "I'm glad I straightened out the mix-up and didn't bother mother."—E. N. Parker in Sunday School Times.

Fruit spurs on main limbs do business with all their sap.

Fair Oaks and surrounding colonies at last have in circulation a petition to form an irrigation district.

Santa Ynez river has eaten a big semicircle from the Hollister Estate Co's land. They are driving groups of piling straight across the curve 20 feet apart in a line one-third of a mile long. From this, other lines 100 feet apart will be run to the bank. This is expected so to break the current that it will still flow into the curve but so slowly that sediment will eventually be deposited until the river will exclude itself.

A million dollars has already been spent in Reclamation District 1001 of Sutter county, largely in building dikes, which are to be six feet above the highest known high water. They will protect about 33,000 acres. All such projects along the Sacramento and San Joaquin rivers are planned under direction of the State Reclamation Board in harmony with a general plan for complete control of their flood waters. Otherwise the high water mark would rise from year to year as additional lands are reclaimed and less area available as a reservoir for flood waters.

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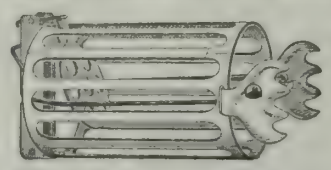

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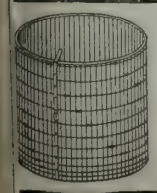

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HOUSEWIVES SHOULD BUY MUTTON IN QUARTERS.

Food specialists of the Department of Agriculture who have been investigating the subject find that there is a wide variation in the prices asked for lamb and mutton in different cities and towns and even in different butcher shops in the same locality. In many places the prices asked by the pound for these foods closely approach those asked for beef and pork. In other places, owing to conditions of local supply, there is such a price difference between mutton and beef as to make mutton a relatively cheap food. The specialists of the Department of Agriculture find that in nutritive value and digestibility mutton is practically interchangeable with beef. The waste is about the same percentage, although mutton has a slight advantage over beef in containing less water.

In many markets where the pound price of mutton and lamb is high, careful shoppers will find that they can obtain this form of meat very much lower by buying hind quarters or half carcasses instead of buying chops and roasts separately by the pound. In the case of a hind quarter the chops can be cut off and served for one meal and the roast will serve for another meal. In this way the family frequently will obtain chops at a price per pound lower than that asked for roast alone by the pound. Where a half carcass is bought, in addition to the chops and roasts, the family will have a fore quarter and meat for stewing. The sheep is very convenient for purchase in this way as it is small and can be kept in an ordinary refrigerator. Frequently families combine and buy a whole carcass and divide it, and in this case get still better prices and obtain expensive cuts at a low average per pound.

Two-year-old Harry had never seen a live lamb, his only knowledge of that animal being derived from a toy one on wheels. While visiting grandpa on the farm he was taken to the sheep-pen to see the lambs. After looking at them for a few minutes, he looked up at grandpa with a puzzled expression and asked: "Where's the wheels?"

A little fellow who had been told by his teacher that he must always say, "I beg your pardon," when he had done anything for which he should ask pardon, didn't catch the words correctly; and, on the next occasion when he wished to be polite, he nodded his head and blushingly said, "Baking powder."—American Boy.

No state in the west is more dependent upon its forest growth than California; no state has so long a fire season; none contains forests of such extreme inflammability. But in spite of the fact that the necessity for fire protection is generally understood, California does nothing to protect the forests on her mountains.

Aunt Lou (holding up Nelson's baby cousin in long clothes): "Isn't he sweet?" Nelson (a trifle jealous, looking at the long clothes): "Looks like a pen-wiper!"—Youth's Companion.

Fair Play in Telephone Rates

IT is human nature to resent paying more than any one else and to demand cheap telephone service regardless of the cost of providing it.

But service at a uniform rate wouldn't be cheap.

It would simply mean that those making a few calls a day were paying for the service of the merchant or corporation handling hundreds of calls.

That wouldn't be fair, would it? No more so than that you should pay the same charge for a quart of milk as another pays for a gallon.

To be of the greatest usefulness, the telephone should reach every home, office and business place. To put it there, rates must be so graded that every person may have the kind of service he requires, at a rate he can easily afford.

Abroad, uniform rates have been tried by the government-owned systems and have so restricted the use of the telephone that it is of small value.

The great majority of Bell subscribers actually pay less than the average rate. There are a few who use the telephone in their business for their profit who pay according to their use, establishing an average rate higher than that paid by the majority of the subscribers.

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The Markets.

(Unless otherwise noted prices quoted are f. o. b. San Francisco.)

San Francisco, Oct. 21, 1914.

WHEAT

A further heavy movement has taken place in the north, cleaning up some large holdings in the country, and there is accordingly a firmer tendency. The local market is not especially active, but values are well maintained at the old level.

California Club, ctl	$1.65@1.70
Forty-fold	1.70@1.75
Northern Club	1.65@1.70
Northern Bluestem	1.90@1.95
Northern Red	1.65@1.90

BARLEY

Notwithstanding a continued heavy shipping movement, local trading is very quiet, neither spot nor future grain receiving much attention. Feed prices still tend downward.

Brewing & Shipping	$1.15 @1.20
Choice Feed, per ctl	1.05 @1.07½
Common Feed	Nominal

OATS.

The general movement is limited, and with supplies ample for all requirements there is a downward tendency in prices, both red and white feed being lower. Seed grapes are pretty firmly held, as there is considerable inquiry.

Red Feed	$1.35 @1.40
Seed	1.65 @1.90
Gray	Nominal
White	1.42½@1.45
Black Seed	1.75 @2.25

CORN

Local business is quiet, but there is plenty of eastern stock offered for shipping, and values show no particular firmness. Egyptian is rather easy, with rather large supplies and no great demand locally.

California Yellow	Nominal
Eastern Yellow	$1.80 @1.85
Eastern White	Nominal
Egyptian	1.65 @1.70
Milo Maize	1.75 @1.80

RYE

Values are entirely nominal, as there is not enough business under way to establish a definite quotation.

Rye, per ctl	Nominal

BEANS

Several lines show a slight recovery from the decline of last week, but few changes of much importance are noted, and it is believed that values for the new crop are now fairly well established. Some anxiety was felt as to possible damage from the rain in the valley districts, but so far as has been learned there has been no serious loss on this account and the crop in most localities has shown up well as to both quantity and quality. Buyers throughout the country apparently look for no further decline, as the inquiry has picked up quite well of late, and shipments are going out rapidly. Limas, though they have dropped sharply from the early prices, are again moving freely.

(On wharf.)

Bayos: Cal. per ctl.	$3.50 @3.60
Blackeyes	3.50 @3.60
Cranberry Beans	3.65 @3.75
Horse Beans	3.00 @3.50
Small Whites	4.00 @4.25
Large White	3.15 @3.25
Limas	5.25 @5.30
Pea	4.25 @4.50
Pink	3.00 @3.10
Red Kidneys	4.25 @4.50
Mexican Red	4.25 @4.50

SEEDS

A few samples of new alfalfa have come in recently, and while values are not very well established there is some business at the appearing quotations. A lively demand is expected from now on, and miscellaneous lines are also picking up.

Alfalfa	17@18c
Crown Mustard, per lb	Nominal
Canary	Nominal
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR

The recent export trade from this port has been fairly active, though no great shipping business is handled from here. Values are steadily held, with the ordinary local consuming demand.

Cal. Family Extras	$6.60 @6.80
Bakers' Extras	5.50 @6.00

HAY

The hay market is taking on a little better appearance, as the arrivals have fallen off materially in the last week, and the fields are getting pretty well cleaned up. There is said to be still a good deal in storage through the country, but probably not enough to depress the market seriously from now on. There is moreover an export movement, which offers some promise of relief; but it will be impossible to size up the outlook until winter conditions are better known. Offerings are still mostly of inferior quality, and prices for such hay have been maked down, as it is very difficult to place it. Local buyers are supplied for the present, and are taking little interest. River alfalfa is coming in freely, finding only a fair demand.

No. 1 Wheat, or Wheat and Oats	$8.00@ 9.00
do No. 2	6.00@ 7.50
Barley	5.00@ 7.50
Tame Oats	6.00@10.00
Wild Oats	5.00@ 7.00
Alfalfa	6.00@ 9.00
Stock Hay	4.50@ 5.00
Straw, per bale	30@ 45c

FEEDSTUFFS

Bran has declined slightly, as shipments are coming in more freely, from the northern mills. Oil cake meal is again out of the market. Other descriptions are quiet, but steady at the former quotations.

Alfalfa-Molasses Meal, per ton	$19.00@20.00
Alfalfa Meal, per ton	14.00@15.00
Bran, per ton,	29.00@30.00
Oilcake Meal	Nominal
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	24.00@25.00
Rolled Oats	32.00@33.00
Shorts	32.00@33.00

VEGETABLES

The local demand for garden truck shows a little more life this week, and while supplies in most lines are keeping up well, several items show improvement in prices. River tomatoes are still easy, as the supply continues large and the quality is nothing extra; but offerings from other quarters are higher. Wax and lima beans show some improvement, and cucumbers have been marked up sharply. Summer and cream squash and okra are also a little firmer. Green corn receives less attention, and is offered at a lower range. The top figure for celery is lower, and chili peppers will hardly bring last week's prices, though bell peppers are quite firm.

Green Peppers, bell, lugs	25@ 35c
Green Peppers, Chili	35@ 40c
Carrots, per sack	35@ 50c
Tomatoes, lugs	20@ 60c
Beans: Wax, per lb	2@3½c
String	2@ 3c
Lima	2@ 4c
Cucumbers, lugs	35@ 60c
Eggplant, lugs	25@ 50c
Green Corn, sack	75c@ 1.50
Summer Squash, box	35@ 50c
Cream Squash, box	30@ 40c
Okra, box	30@ 40c
Celery, doz	15@ 25c
Sprouts lb	2@ 3c

POTATOES AND ONIONS

Potatoes are plentiful both here and in the north, with reports of good crops in other sections, and local prices for river stock have taken another drop, though Salinas potatoes are fairly well held. Onions show no further decline, being already very cheap, but are weak, with efforts to clean up the river stock before further rains.

Potatoes: Salinas, ctl.	$1.40@ 1.60
River Burbanks, ctl.	60@ 80c
Sweet Potatoes, ctl.	1.40@ 1.50
Onions: Yellow, sack	30@ 40c
Garlic, per lb	10@ 15c

POULTRY

There is little change in the local poultry market. Supplies continue to come in freely to both local and eastern points, and with a comparatively light demand there is no firmness as to values. Young stock is especially weak at present, as this figures largely in the receipts.

Turkeys, lb	19 @24 c
Large Broilers	20 @22 c
Small Broilers, per lb	20 @23 c
Fryers, per lb	19 @20 c
Hens, large, per lb	17 @18 c
Hens, extra, er lb	17 @18 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb	18 @20 c
Squabs, per doz	2.00@ 3.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00

BUTTER

Prices have again advanced a little this week, and while there is no greater firmness the outlook is favorable for still higher prices, though considerable New Zealand butter is again coming in. Considerable interest is taken in the opening of the new railroad to Eureka, which is expected to bring a prominent producing section into closer touch with this market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30½	31½	31	32	32½	31½
Prime	28	28	28	28	28	28
Firsts	26	26	26	26	26	26

EGGS

Prices are still steadily advancing, with diminishing production and a greater demand for shipment to other markets. The greatest advance has been on pullets, which have received more attention since the extra grade has gone up.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	48	48	48	49	51	51
Selected Pul	33½	33½	33½	35	40	41

CHEESE

Offerings of both flats and Y. A.'s have been considerable lighter this week, and both grades have jumped about two cents.

Fancy California Flats, pr lb	15½c
New Young American, fancy	16c
Monterey Cheese	15@16c

Butter:	Wed.	Thu	Fri.	Sat.	Mon.	Tu.
Extras	31	31	31	31	31	31
Eggs	54	50	44	40	43	45
Cal. Cheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

The recent showers have caused a curtailment of offerings in several lines, but the general market situation has not been much affected. Grapes and berries show more change as to price than anything else, everything in these lines being sharply advanced, with very limited arrivals very early this week. No figs are offered at present. Bartlett pears are about cleaned up, and the remaining supply of peaches is small. Cantaloupes are easier, watermelons being steady as before. The apple market is very sluggish and shows increasing signs of weakness, the crop being large practically everywhere, though there is no quotable decline this week.

Cranberries, bbl	$7.00@ 7.50
Huckleberries, lb	6@ 8c
Strawberries, chest	4.00@ 6.00
Raspberries, chest	4.00@ 7.00
Apples, Newtown Pippin	50@ 90c
Belleflowers	40@ 65c
Spitzenberg	50@ 90c
Gravenstein	50@ 1.00
Crabapples	25@ 50c
Quinces, box	75@ 1.00
Pears, box:	
Winter Nellis	75@ 1.00
Peaches	30@ 50c
Figs: Black, double layer	
White, single layer	
Pomegranates, box	25@ 1.25
Persimmons, box	50c@ 1.25
Cantaloupes, crate	1.00@ 1.50
Watermelons, doz	75@ 2.00
Grapes: Malagas, crate	50@ 75c
Tokays, crate	50c@ 1.00
Seedless, crate	75c@ 1.00
Black	75@ 90c
Cornichon	

DRIED FRUITS

There is not much feature to the dried fruit market and values in general show little strength, while the demand is unusually slow for this season. There was a little movement in peaches last week, but this has subsided and the fruit is back in its old position. Prunes have broken badly, and apricots are easy. Local packers say that the season has brought out some surprises which have tended to throw the whole trade into confusion. It was at first anticipated that European crops would not be harvested, and several lines of fruit were bought at high prices early in the season. Now it appears that the French prunes are being offered at low prices in New York, where they have affected the market for California fruit; and with less than usual export market for other lines, domestic buyers also are inclined to hold off, expecting declines. The New York Journal of Commerce says: "California Raisins on the spot are getting little attention, and there seems to be no demand for forward shipments from the Coast in this quarter. Prices are steady on the basis of the Associated Co. quotations, however. Buyers are warned to carefully examine cheap offerings as a good many Malaga and other wine and table grapes have been dried, making raisins much inferior to those produced from Muscats.

"California Prunes remain dull with prices irregular and easy owing to the failure of the export demand and the indifference of home buyers. However, about the best that can be done at present in assortments covering 40s to 60s is 5c f. o. b. four size bulk basis. Peaches are slow of sale here and prices are nominal while the tone of the Coast market is easy. The same may be said of Apricots."

Evap, Apples, 1914	4 @5 c
Apricots, 1914	6 @9 c
Figs: White, 1914	4 c
Black	2½@2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, 1914	4 @4½c
Peaches, new	3½@4 c
Pears	6 @8 c
Raisins (in sweatbox):	
Loose Muscatels	4 @4½c
Pears	6 @8 c
Seedless Sultanas	5 c

CITRUS FRUITS

During the past week the demand for Valencias has been very active, the best stock averaging from $3.25 to $4.15 on the New York markets. With a good supply of Valencias still to go forward, experts recommend that Tulare county shippers will do well to regulate the movements of their navels until such time as the eastern markets will be in shape to absorb increased supplies. 22 cars of Valencias auctioned in New York on the 19th averaged $2.70 to $4.70; while prices on other eastern marts ruled slightly lower.

The demand for California lemons is good, with desirable sizes bringing from $4.50 to $5.00.

In San Francisco decreasing offerings of miscellaneous summer fruits are bringing oranges into somewhat more prominence locally, and with a slightly improved demand has come a little stiffening as to prices. No great activity is expected, however, until the new navels are in the market. Other citrus goods are unchanged.

Oranges:	
Valencias, box	$1.75@2.75
Tangerines, crate	75c@1.25
Grapefruit, seedless, box	1.25@2.50
Lemons, box	$2.00@4.50

NUTS

The Association almonds are said to be now well sold out, with the exception of a few IXL's and Drakes. There are a good many scattered holdings in the country, however, and local buyers are taking no interest, being unwilling to pay anything like the Association prices. The southern Association walnuts are pretty well sold out.

(Association Prices.)

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c

No. 1 Softshell	16½c
No. 1 Hardshell	Nominal
Budded	20 c
No. 2	12 c

HONEY

There is still some call for comb honey, but the local demand is limited, and prices have been reduced, as offerings are larger than can be absorbed. It is difficult to sell extracted at any price, though those who want it show no objection to the quoted figures. A lot of Nevada honey is going east.

Comb: White	11 @13 c
Amber	7 @10 c
Dark	6 @ 7 c
Extracted: White	7 @ 8 c
Amber	4½ @ 6 c
Off grades	3 @ 4 c

BEESWAX

There is a market within rather narrow limits, for good, pure beeswax, which could probably be sold at about the appearing quotations. There is considerable adulterated stock offering, but this is not readily disposed of.

Light	31 @32½c
Dark	27½ @31 c

HOPS

There is considerable business under way, both in California and the north, but growers are beginning to show a stronger disposition to hold, and efforts are being made to get up an organization to keep the market on a more stable basis.

1914 crop	12 @13 c

WOOL

Local buyers are still keeping out of the market, being afraid to make any purchases under present conditions, and most of the wool is still held in the country. Reports that England had stopped the exportation of wool were said to have caused more firmness in the east, but the effect has apparently not extended this far.

Fall clip	Nominal

LIVE STOCK

The principal feature in the livestock market at present is the liberal arrival of hogs, which have been in rather excessive supply and show a further decline. There is little change in other lines, which continue steady at about the former range.

Steers: No. 1	6¾ @ 7 c
No. 2	6½ @ 6¾ c
Cows and Heifers: No. 1	5¾ @ 6 c
No. 2	5¼ @ 5½ c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½ c
Medium	8½ @ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
250 to 300 lbs	7½ c
125 to 250 lbs	8 c
Prime Wethers	5 @ 5½ c
Ewes	4½ @ 5 c
Milk Lambs	6½ @ 6¾ c

HORSES

Very few horses of the types that are readily salable here are appearing, and other offerings move off rather slowly. A few good all-purpose horses that appeared this week received as much attention from local buyers as could be expected under present conditions, but the situation offers no great encouragement to shippers.

Heavy drafters, 1700 lbs. and over	$225@275
Light Dra's, 1500 to 1650	200@215
Chunks, 1350 to 1500...	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range..	90@1.00
Delivery Horses, 1050 to 1250	75@100

MULES

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

DRESSED MEATS

Steers	10½ @11½c
Heifers	10½ @11 c
Veal, large	13½ @14 c
Small	15 @15½c
Mutton: Wethers	10½ @11½c
Ewes	10 @10½c
Suckling Lambs	13 @13½c
Dressed Hogs	13 @14 c

SPECIAL DECIDUOUS MARKET REPORT.

By J. L. Nagle.

Sacramento, Cal., Oct. 19, 1914.

The continuous active demand for Tokays and Malagas in all markets exceeds the supply. This condition was unexpected by shippers on account of the heavy movement during the last ten days, but there were practically no other grapes on the eastern markets, aside from California, and, furthermore, the fruit seems to be arriving in good condition.

The recent rain, however, has unquestionably done some damage, the extent of which cannot be determined at the present writing, but unquestionably shipments will be affected considerably and the movement of grapes from now on will be very light.

Despite the fact that the importation of Almerias is very heavy, Emperors in drums are meeting at a ready sale at from $2.25 to $2.35 f. o. b. California. Quite a few cars of Tokays have been packed in sawdust that are now in storage in the east. If it can be shown that they will hold up as well as the Emperors, it will unquestionably be of big benefit to the industry.

The markets for the past week ranged as follows:

New York: Tokays, 90c to $1.35; Cornichons, $1.11 to $1.35; Malagas, 94c to $1.30; Nellis, $1.80 to $3.30; Clairgeaus, $1.40 to $2.60; Comice, $1.90 to $2.80; B. Hardy, $1.60 to $1.95; Morceaus, $2.19 to $2.40; Pomegranates, 90c to $1.

Chicago: Tokays, 85c to $1.30; Cornichons, $1.16; Malagas, 95c to $1.20; Persimmons, $1,26; Quinces, $1.04; Pomegranates, $1.25.

Minneapolis: Tokays, 80c to $1.30; Cornichons, $1 to $1.05; Malagas, $1.05 to $1.10; Nellis, $1.95; Quinces, $1.80.

Boston: Tokays, $1.05 to $1.55; Cornichons, $1.15 to $1.45; Ladyfingers, $1.20 to $1.30; Malagas, $1 to $1.35.

Philadelphia: Tokays, 80c to $1.35; Cornichons, $1.15 to $1.35; Malagas, 95c to $1.25; Emperors, 80c to $1.15; Muscats, $1.10 to $1.75.

Total deciduous shipments to Oct. 20th were 14,221 cars, as against 11,884 to same date last year.

IS CORN PROFITABLE?

To the Editor: Kindly state whether there is any portion of California where, considering price of land and other expenses, corn growing is profitable. I shall be glad if you will mention the most promising regions and if you will state specifically whether the Owens River Valley, considering its distance from markets is suitable. In the corn quotations in the Press, is the price given per sack or per hundred pounds? —H. P. C., Ventura.

[Except on naturally moist land corn likes a drink occasionally all summer. It can't get that in most parts of California without irrigation. With irrigation, more money can be made with most any of the crops grown in a given section. We doubt if corn in the dry Owens valley will yield over 1500 or 2000 pounds per acre, which would bring at present prices not over $35 at a most liberal estimate. We should advise Kaffir or Egyptian corn if you wish such grain.—Editor.]

KILLING BERMUDA.

To the Editor: I note the query in the Press of October 10 in regard to methods of killing Bermuda grass. While I have not had personal experience, I was told by a government agriculturist in Texas that it could be eradicated by plowing it up and planting sorghum to a thick enough stand to completely shade it. The treatment may have to be repeated for two seasons, but shade will eventually kill the plant.—H. P. Chandler, Ventura.

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WRITE FOR BOOKLET "LIMING OF SOILS"

CONSOLIDATED PACIFIC CEMENT PLASTER CO.

611 San Fernando Bldg., Los Angeles, Calif.

Publisher's Department.

The "boys" in the field did not send in the usual number of new subscribers last week—the total number being 193. Had two of our men worked during the week instead of laying off, we doubtless would have in excess of 250 new subscribers to report.

Work on our new poultry book is going ahead rapidly and as we go through it more and more we are convinced that it will be a very valuable book for the poultry raisers of California. An extended announcement will be given in our next issue.

If you are a farmer you need a copy of our book "One Thousand Questions in California Agriculture Answered." Whether your interests are wholly in fruit growing, or in live stock, or dairying, or poultry, the book will be of value to you. Price $1.50. Send for our special subscription offer in connection with it.

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LOCAL REPRESENTATIVES to write orders for Roeding "True-Trees." Highly satisfactory selling plans and commission offered ranchers, fruit growers, real estate men or salesmen, for a part of their time this Fall and Winter. Write at once for full particulars. FANCHER CREEK NURSERIES, Fresno, Calif., care Holland Bldg.

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WANTED—Agricultural College graduate with practical experience wishes position on stock or dairy ranch, at present taking short course at University Farm, which ends Nov. 14th. Box 340, Davis, Cal.

WANTED—A second-hand "J. I. Case" stationary threshing out, preferably a 28-inch cylinder. Must be in good order. Communicate with Sycamore Ranch, Los Molinos, Cal.

WANTED—Good milch goats. State breed, age, price, etc. Percy Pettit, R. 3, Box 118, Hanford, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

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THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

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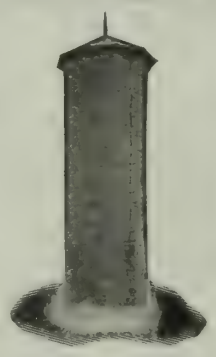

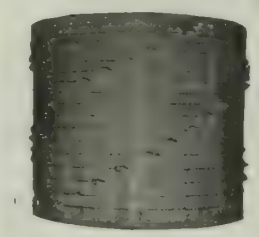

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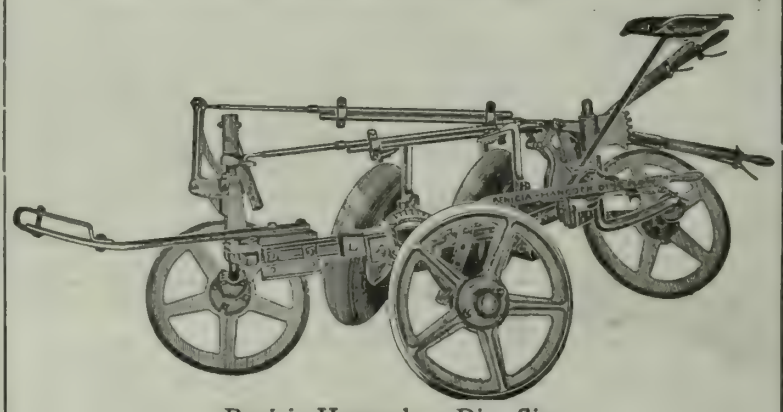

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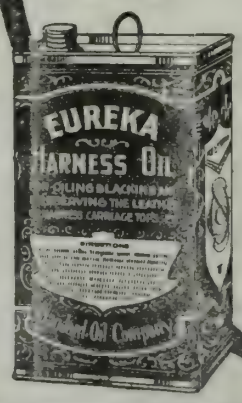

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Vol. LXXXVIII—No. 18 Forty-fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, October 31, 1914 LOS ANGELES

State Library

California Vs. Kangaroo Butter.

[Written for PACIFIC RURAL PRESS.]

Kangaroo butter, as the Australian and New Zealand product has come to be known to the California trade, has played havoc with butter prices here during the past year.

Two years ago we talked of this new factor, with some alarm it is true, but mostly it was viewed as a new condition which our American aggression would overcome in a satisfactory manner. Now, however, we realize that the entering of this competition is gradually undermining the foundation of our entire dairy structure by lowering the price of our butter markets to a level with countries enjoying cheaper land, interest rates, labor, cows, and lastly more thorough organization of the dairy interests.

Those who are perfectly frank in the matter admit that the only weapon which we can hope to successfully use in combating this issue is quality, which in its last analysis means better methods in handling both by the producer and manufacturer.

To establish this claim, S. H. Greene, one of our best posted butter dealers, recently, while addressing the creamery operators' and dairymen's convention at Modesto on the subject of making a market for California's dairy produce, said:

"We do not have to make a market. Our markets are already waiting, but not for the kind of butter that we are manufacturing." He then went on to relate how this fact had been most forcibly brought home to him last spring while endeavoring to make a sale of California butter in Canada. His market was open, the price was satisfactory and everything favorable for making the deal except that his butter lacked in color, salt, flavor, appearance and pack, and in other ways fell short of the standard of his competitor who handled the Kangaroo product. He further said that it was impossible to secure a carload of uniformly graded butter in San Francisco in any reasonable length of time.

What Mr. Greene said of conditions prevailing in other markets are just such as we have experienced in our home market since the tariff was lowered and is conceded to be the cause of poor prices.

Going further into the matter of this imported article and its quality, it is well to know whether it is a temporary factor or not.

There is, according to F. T. A. Fricke, government representative from Australia, and the shipping firm of Hind, Rolph and Co., in whose ships the foreign goods have been carried, a possibility that a civil embargo may be placed on dairy products by the British government in both Australia and New Zealand, as has been done since the beginning of the present war with wheat and other food stuffs. In that case no butter would be shipped to American ports as long as the war lasted, thereby causing a temporary relief.

When we look further than that, though, we learn from E. Clifton, commissioner from New Zealand, that his country yearly exports to Great Britain $50,000,000 worth of butter and $60,000,000 worth of cheese, also that this trade has necessitated the establishment of a high standard and that it is with this quality that they expect to enlarge their American export trade. We shall give, in a later issue, Mr. Clifton's story of how these standards have been established and maintained, but the important point here is that the New Zealand butter will in future years be a keen competitor, even though they may be temporarily set back with the European war.

In Australia the production of butter has not been upon as high a level of perfection as in New Zealand, according to Mr. Fricke, but that government has realized that an export trade with America is a most desirable thing with their comparatively small home market, and is at this time framing legislation, which provides for universal grading of dairy products, the feature after all which is the backbone of the New Zealander's success as exporters. It is apparent, therefore, that we may expect more, rather than less of Australian competition in future years.

Alfalfa and Dairy Cows in Kings County. California's Climatic advantages are apparent.

It also gives the California dairy interests food for thought in solving their own problem, for if the question of price is to resolve itself around quality, then we know our work must be along the same line that has put the imported article on such a high plane of excellence. If grading is, as most agree, the necessary factor, our work is chiefly in that direction.

Co-operation is, we are told, the surest method of securing results, but what channel this co-operation is to run in, is a much debated subject, S. H. Greene beieving it to be a matter of individual co-operation between the creamery and its patron. He be-

(Continued on page 432.)

PACIFIC RURAL PRESS

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Frank Honeywell - Publisher and Manager
W. H. Schrader - - Advertising Manager
D. L. Schrader - - Subscription Manager
R. E. Hodges, J. C. Loomis - - - - Assistant Editors

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., October 28, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka	.20	5.17	3.59	64°	42°
Red Bluff	.00	1.46	2.20	82	44
Sacramento	.00	.50	1.31	84	44
San Francisco	.00	.31	1.40	78	50
San Jose	.00	.40	1.15	86	38
Fresno	.00	.32	.92	88	44
Independence	.00	.37	.81	76	40
San Luis Obispo	.00	.02	1.66	92	46
Los Angeles	.00	.19	.74	92	54
San Diego	.04	.72	.47	90	54

T means trace

The Week.

It has been a glorious autumn for those peculiar people: The Candidates. The weather has favored maximum activity and maximum receptivity on the part of their game—for idle people have been many, through waiting for rains to fall and enterprise to rise. Then, too, gasoline has been cheaper than ever, perhaps, and it has been possible to secure very cheaply that alternation of explosion and motion essential to the modern practice of stump-oratory. But it must be admitted that Candidates have found the edge of popular interest in their performances dulled somewhat because the Europeans are using so much higher explosives in their efforts at getting the start of the world—efforts like those our Candidates employ, but fiercer and more destructive of life and property. Besides, our Candidates find the people less trustful of the Utopianism which they are preaching as attainable only through their particular pipe lines. The war has naturally shocked the world into doubt as to whether the new light which has so freely played around the political horizon recently has really been the streakings of Millennium Dawn or reflection from the ever-burning fires of personal ambition. However, this is a hopeful sign, for it has thrown the people into a more critical attitude and all that we need for a fair declaration of the popular will is a continuation of the clear, blue sky and bright moon-lit nights for a few days more, for they have favored popular assemblies and neighborhood converse. If one does not know what he is voting for this time he will have only his own carelessness or dullness to blame. It will greatly advantage the state to have the popular will fully declared, and as soon as the votes are in the box, the rains may freely content themselves with their sport upon the thirsty earth. This seems to be the way the game is laid out and it will be a very good game of peace and plenty in this corner of the earth.

Bankers as Teachers of Agriculture.

And now the bankers of the country are constituted agricultural teachers. They do not have to constitute themselves teachers, as agricultural editors do: they are duly appointed to their new function by the National Implement and Vehicle Association, which says of itself that it "is composed of representative manufacturers and jobbers of agricultural implements and other farm operating equipment." We take it then that bankers are not called to be teachers of agriculture by the farmers but by the implement and vehicle association—which certainly ought to be a going concern. We are not disposed to question the right of the men of wheels to appoint the men of gold to be teachers of farmers: everybody, nowadays, seems to possess a popular right to tell farmers what they should do. In fact, we are quite willing the bankers should accept this appointment by the implement men and go at their new job. The particular reason why we are willing to recognize this new sect of agricultural teachers is because it is common experience that as soon as a man tries to teach a thing he begins to learn something about it, and if there is one unusually necessary thing just at this time it is that bankers should know something about farming and act intelligently and sympathetically on that knowledge. We have often told bankers in these columns that they have always had a clearer eye and a warmer heart for every kind of speculation than they have had for the best and most fundamental kind of production—that of the land—and so we have perhaps helped a little to qualify them for their new line of work.

The implement association, above designated, sends us a copy of the commission to teach farmers, which is now being issued to thirty thousand bankers. It specifies the lessons they are to be taught, viz.: (1) sell crops, do not speculate on future prices; (2) diversify products; (3) get in a big crop in 1915; (4) raise more stock and get more manure to get larger crops, etc. This is a good set of lessons and bankers can teach them effectively, especially if they learn one lesson for themselves and the implement men put it in these words: "Discourage all speculation but encourage the expansion of legitimate business in rural communities by reasonable extension of credit." And now we are sure we are right in getting bankers to teach farmers—not so much for what they teach as for what they may learn. It strikes us that the Implement Association itself is not so slow at the teaching art. It seems good at setting lessons for bankers.

Why It is Desirable to Educate Bankers.

The particular reason why we welcome all honest efforts to educate bankers in agriculture is of course because it will be necessary for them to change their point of view somewhat, and warm up their financial emotions a great deal, if they are to do what is popularly expected of them as dispensers, under the laws, of the credit which Uncle Sam has agreed to provide for with the surplus funds of the government. It is now announced by the Secretary of the Treasury that the twelve federal reserve banks of the new banking system will be opened for business on November 16. Under the new system the Federal Government will be able by deposits from the general fund of the Treasury in reserve banks to aid producers of staples. "As soon as the reserve banks are in operation," says the Secretary of the Treasury, "I shall transfer to them as large an amount of Government funds as possible. This will in turn enable them to extend enlarged credits to National and State banks which may become members of the Federal reserve system, which they in turn may extend to their customers. The opening of the Federal Reserve banks will release more than $400,000,000 of reserve money and largely increase the credit facilities of the banks of the country."

Of course this money is to be given to the local banks for loaning. There is no other way to safeguard it. Some have thought it might be more convenient to receive the money by parcels post, by ordering it by postal card to Washington, but we have little expectation of its ever becoming so easy as that! Farmers must get money through existing banks: or, if they do not care enough about it to get money which can be loaned at less interest, farmers must qualify new banks which will handle cheaper money. The main point at first will be, of course, that farmers cannot be easily mulcted of high interest on the claim that money is scarce. The banker's first lesson, then, will be that money is not scarce; there will always be enough of it to advance well-ordered and responsible production.

A Sugar-Lump Battle.

It is a good thing there is something funny abroad, for there is mightily little light amidst the gloom. It seems, however, that there is just one gleam from the groping darkness of howitzers and Zeppelins, floating mines and submarines, and that is the sugar war between England and Germany—each hoping thereby to handicap the other. On Friday last Great Britain prohibited the importation of sugar into the United Kingdom, with the object of preventing German and Austrian sugar reaching English sale from neutral countries, and thus ultimately giving the Kaiser more war money or war credit. On the next day it was announced that the Berlin government had decided to regulate the exportation of sugar so that the major portion of the crop will be kept in the country for domestic consumption, and so the sugar war becomes a draw: England will not buy and Germany will not sell; both nations will eat their own sugar. German authorities say all their sugar is needed at home and England has announced that she does not need any more sugar and to prove it has reduced the retail price on the sugar she bought at the opening of the war, as described in the Pacific Rural Press of October 10. The general lesson of it is that nations do not forget to fight commercial battles no matter how bloody the real battles may be. The particular lesson of it for this country is that while the Germans and Austrians are eating their own sugar, there is bound to be the busiest kind of sugar bustle in this country and the beet sugar business, appointed to die by tariff wounds in 1916, is brought to life

again by foreign war. There seems to be beet seed enough in sight for the next crop and efforts are in progress to secure home-grown seed for later use and to free this country from dependence upon European seed in the future. It is really ridiculous for the United States to buy sugar, for California alone could produce enough for the whole country, if every other state should retire from production, which none is likely to do.

Ex-Patriation of the Belgians.

Although we warmly sympathize with the feeling involved in the proposed capture of the Belgians for Californian development, we are not keen for the effort because we do not believe it will get anywhere. The Belgians know their business better than many a larger nation does and one item of their business is to sit tight on their own country and heave rocks at invaders. They gave Julius Caesar the time of his life more than two thousand years ago and they are not going to give up their country to any modern imitator of the great Julius who sets up the claim that conquest makes right and title. Their land will be all the dearer to them after its baptism of blood and the sentiment of the world will brook no robbery of it from them. The youth and manhood of Belgium is too busy to emigrate: the old men, the women and children are not what California needs and could not tear them away from their heroes if it should try. The wheels which have been set in motion here for the Belgians are good wheels and will no doubt revolve to good purpose in later plans for selective immigration, but not for mass movement of any kind of people. We do not desire masses of Europeans, and above all we do not want masses of them isolated in spots. Europeans who come here must become Americans and be distributed so that they can be. Besides, Europe thinks too well of the Belgians to favor any considerable expatriation of them. The Paris Temps, as cabled on Monday of this week, believes they will soon be returned to their own country, but in any case "France and England recognize what they owe to the little nation which saved their civilization from hard Germanic tutelage, and will not forego the honor of seeing their country chosen as a second fatherland by those who have totally sacrificed themselves for a cause which is interesting all humanity."

This is of course sentiment also, but it will do as an offset to our own. If Belgium should disappear, France and England have the first claim upon the Belgians and a claim which they would gladly recognize, for Belgians rarely leave their country, except for France, where the language is the same. And so, as we have shown our heart in the matter, it will be just as well to keep the head cool about it, for a time.

The Wheat Situation.

Confirmatory of what we have said about the eager buying of wheat at the north there comes this week the announcement that over half a million bushels sold at Walla Walla on Saturday last, netting the growers one dollar per bushel. There was one sale of holdings in various warehouses of 225,000 bushels at $1.01½ f. o. b—said to be the largest single sale of wheat ever recorded in the northwest. Besides, the report now is that western Canada is short of crop this year—worse than was indicated by the most pessimistic estimates current at harvest time. A large part of central and southern Alberta and southwest Saskatchewan suffered what closely approaches complete failure. Nor are things much better farther east in Canada—the harvest hardly equalling the lowest estimates. Unless California does something more than recently in wheat we shall lose a lot of money, not only in having nothing to sell but in having so much to buy.

Are the Birds Singing This Year?

A lady residing in the hill country east of Oakland records an observation that the birds are not singing this year. She says the birds can be seen as usual, but not heard. She attributes their silence to the war-racket on the other side of the world. It seems to us it might be more reasonably traced to the racket of the newsboys selling "war-extras" on this side. That is harsh enough to hush a steam calliope, but we sometimes try very hard to account for things that aren't so. Listen: are the birds singing?

Queries and Replies

Querists must give name and address.

Too Many Pop-Peanuts.

To the Editor: I have just harvested my peanut crop and so many of the nuts have no kernels. The ground was an old chicken pen so was well fertilized. Can you suggest why?.—D., Chino.

The land was too heavily manured. Direct manuring for peanuts should be avoided because the plant is too actively stimulated, makes too rank growth and fails to fill the shells.

Nurse for Alfalfa.

To the Editor: Have planned to sow barley to protect alfalfa in its tender stage. Is that necessary here on account of cold?—V. A. P., Lincoln.

It is not. Get the land in good shape and sow the alfalfa all by its lonely after the ground gets warm, from February onward, according to location, and do not put in any grain to rob it of moisture and light. It is now getting too late for fall sowing—unless we should have an unusually frostless season.

Manuring Alfalfa.

To the Editor: I have a large pile of well rotted manure about 2 years old; also some new manure. Would it be well to spread this on my alfalfa, which was planted this spring? I want to haul it out sometime this winter, perhaps in January, to catch the rain. How much to the acre is best of the old; also the manure?—L. P., Live Oak.

There is no definite prescription as to the amount and it does not matter whether it is new or old. Get it out as soon as you get all the alfalfa you expect for this season and spread evenly. It should be done while the ground is firm enough to carry the team and wheels without cutting in much. We should not wait until January. Unless you have more manure or less alfalfa than Californians usually have there is no danger of your putting on too much.

"Tule Bugs."

To the Editor: How can I rid a house of the enclosed bugs? The house is sealed and the bugs come of a night when the lamps are lit. The yard is cleared of all trash and old lumber. The bugs seem to be between the two walls.—Reader, Willows.

To the Editor: Am enclosing specimen of a bug that is annoying every one in this locality very much. Please tell me what it is, why they come and how to get rid of them.—Subscriber, Los Molinos.

The insect is brownish, under an inch in length, and is commonly called the "tule bug" because it comes from moist lands and is a good flier, and so covers much country in its usual autumn flight. It is a beetle (Platymus maculicollis) and lives on other insect life and is harmless to man or man's affairs, but is very annoying. It is not established in the house as our Willows reader fears: it is only visiting and will disappear later. It can be prevented from entering houses by screening doors and windows and closing apertures in boarding.

Beet-tops for Alkali.

To the Editor: I have heard that in Salinas Valley they reclaim alkali spots in the beet fields by covering with the tops and plowing under. Can you tell me if there is any truth in it?—R. H. W., Oceanside.

There is a modicum of truth in it; truth increasing as the alkali decreases in strength. Because the plowing under of beet-tops or stable manure, which tends to loosen the surface soil and thus decrease evaporation of moisture from the surface, makes the alkali weaker in the upper soil, and may reduce it so that it is not strong enough to prevent the germination of the seed. After this the plant can handle more alkali and be thrifty. It is true, too, that the plowing-in of organic matter continues to help the beet because it makes the lower soil more mellow and thus facilitates deep rooting. But it all depends upon how much alkali there is in the soil. Plowing in such stuff is not a panacea.

Growing Buckwheat.

To the Editor: Are the peat lands in this vicinity adapted to buckwheat? When is it generally sown? How handled? What is it generally worth? Is the market limited? I am told that it will cope successfully with Bermuda grass and other weeds.—W. J. P., Iseton.

You can grow buckwheat on low bottom land without irrigation if it holds moisture enough to make a corn crop. It can also be grown on higher land with irrigation. As, however, it will stand no frost, it must be a midsummer crop. The seed is usually broadcasted like barley and harvested with a mower. It must be well dried before raking or it will heat in the cock. It can be threshed with a grain separator with proper arrangement of concaves and sieves. There is very little call for it as we in California make hot cakes out of wheat, etc. There is, however, likely to be more call for it, for it is gaining popularity as a summer-grown cover crop in irrigated orchards. The grain at the east is usually worth about a cent a pound. No one should start in largely with buckwheat unless he knows something about handling the crop and the light demand in this state adds other troubles. While growing it will smother out a good many weeds, but we doubt very much its ability to get away with Bermuda.

Planters!

Now is the time for you to decide upon what you will plant this coming season—or if you are not quite ready, at least inform yourself as to the nursery that is equipped to supply you with the best quality of stock.

In buying trees you must consider the experience, facilities and reputation of your nurseryman. The first cost of a tree is small considering the expense of planting, irrigating, pruning, cultivating, etc., and it is necessary therefore to get trees that are true to name and which will produce the best results.

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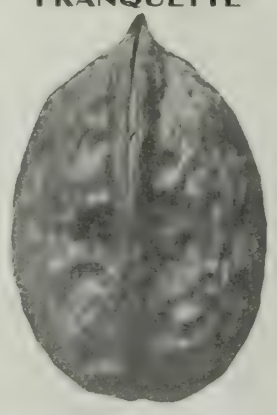

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Training Thompson Seedless.

[Written for the PACIFIC RURAL PRESS.]

"Most of the expense in raising Thompson Seedless is in the pruning," says Cecil Feaver of Fresno county, who with his brother George, has been using a system for ten years which is now spreading widely especially among younger vineyards.

"By our system the pruning has never cost us over $7.50 per 1,000 vines. It costs some others as much as $9. By the old system of horizontal wiring, the pruning costs $20 to $25 per 1000 if done right; and we think the crop is far better by our cheaper method."

Three tons dried is a common yield on the Feaver place—last year it was more, and one year it was four—though we know of Thompson's run on wires in the same community, where two tons is a good yield per acre. This in spite of the fact that even on that sandy soil of Mr. Feaver's no fertilizer has been applied in ten years.

He trained the vines to the top of 5-foot stakes driven a foot into the ground. Some of the vines were doubled over the top of the stakes just a couple of inches so they could be tied that way. As they grew older, the strings rotted away, but the vines still cling tightly. Some folks with this system use seven-foot stakes, but Mr. Feaver thinks this is an unnecessary exposure of the vines to wind and weight of the fruit. The crowns were formed about three feet high on only one trunk per vine.

In pruning now, from January to March, Cecil leaves 18 or 20 inches of last season's growth. George leaves only a foot. This depends on the vigor of the canes and their number. Plump, vigorous canes that have grown long, from a head of only three or four arms, should have considerably more length than others that are weaker. It is claimed that if not enough wood is left, the fruit is inferior, while if too much is left the bunches as well as the fruit are inferior.

The object of leaving the canes so long is because Thompson seedless are unlike most other varieties in that the buds, near the base of a cane which grew last year, will produce only wood growth. Buds farther from the base of the cane, up to about six feet, will produce shoots which will bear fruit. About two good bunches will grow on the shoot from each bud.

Therefore, leave two or three buds or "eyes" to grow new wood, which will send out fruit-bearing shoots next year; and then leave half as many more buds as you want bunches of grapes on that cane. Remember that overbearing injures a vine as strained strength hurts a man. Divide the total crop the vine ought to produce, among all the canes, in proportion to their vigor as shown by their last season's growth.

The more fruit that develops next summer, within reasonable limits, the less wood-growth will be made from the buds at the base of the canes. Since plenty of wood for the following crop must be grown next summer, and since the tendency of sap is to slight them and go to the farthest end of the cane, some means must be used to force sap into these base buds. This is accomplished by some people, by letting the canes grow longer than Mr. Feaver does and bending their tips back to the head. This obstructs the sap and forces more of it into the lower buds. The same thing is accomplished to a slighter degree by laying the canes horizontally and twisting them around a wire trellis. It may also be accomplished to a degree by pinching off the tip of the growing cane very shortly after blossoming, but not while in bloom. Mr. Feaver lets them grow and their own weight bends them downward especially after the fruit becomes heavy. He leaves a few of the upright growing water sprouts on the trunk instead of pulling them off, as many do when suckering in the spring.

These can be made to bear fruit wood next year; but he is careful not to allow too many of them, since they would rob the main limbs at the crown. A few are really valuable in that hot country anyway to prevent sunburn, of the trunks. Sunburn does not show visibly on the bark, but it affects the circulation of the vine.

Thus, the coming crop is regulated by the pruner, and provision is made for new growth to bear fruit in the year following. This is the sum total of the good pruner's work, whatever his method.

With wire trellis, the temptation is too often yielded to, of leaving a twisted mat of vines around the wires because it is too much trouble to untwist and then tie back again after cutting them off to the proper length. Leaving the long canes on the wires year after year gives too little encouragement for new wood to grow from which fruit wood may come later. We see no reason except this, why Mr. Feaver's neighbor should not get as much of a crop as Mr. Feaver does. But if he prunes right to get such a crop, he is at about double the expense besides the cost of the wires.

While grape pruning now would be dangerous in frosty locations because it would bring on the new growth early in spring, they have very little late spring frost in Fresno county. Considering that, it would seem rather advisable to prune as early as convenient in order to get it done in good weather and the prunings hauled off without compacting the ground. Thus the earlier Thompsons for shipping East are assured of a market because they beat the Malagas, which often compete to the disadvantage of later Thompsons. This is no particular object with raisins, though it is nice to have even the raisins on an early market before the others come.

KEEPING SQUASHES.

Hubbard squashes so hard that you can't stick a jackknife into them are ready for storage if they are thoroughly dry. Unlike sweet potatoes, an attic or furnace room is best, because it is warm. Dryness also is essential to keeping squash from mold and rot.

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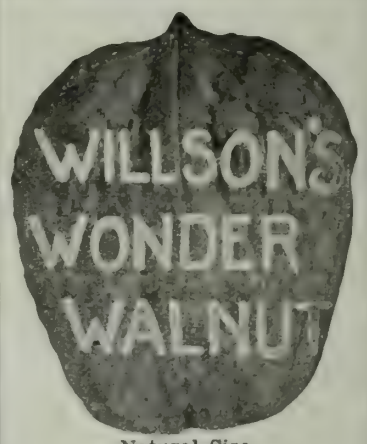

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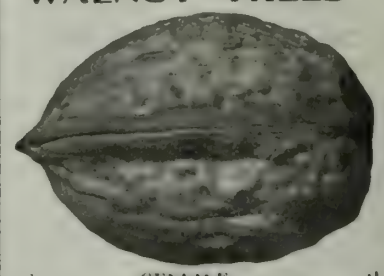

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FRANK GRECO
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Phosphoric Acid Sources.

[Written for the PACIFIC RURAL PRESS
By J. E. Adamson, Pomona.]

Phosphorus is one of the important elements of plant food which group themselves under the name fertilizer, but cannot be safely handled in its pure form, in fact will take fire at a little over 100 degrees, therefore is included in the fertilizer program in the form of calcium phosphate, in which form it is found in the bones of animals and in phosphate rock, where it has been deposited from prehistoric animals.

In this combination with lime it forms a considerable portion of all animals' bones. It reaches them by way of the seeds and other portions of plants which are eaten. Hence it is important to the life not only of the plant but of the animal kingdom as well.

It is found in some phosphate form in most of the rocks and is introduced into the soil by the decomposition of these rocks. It is this source of supply that is tapped by the growth and decay of certain plants, and also by the formation of humus in the process of decomposing manure or other organic matter added to the soil.

In the form in which we buy it for fertilizer it is known as phosphoric acid and costs in its best condition about 5 cents per pound, or $1.00 per unit. This price is for phosphoric acid, which is readily soluble in water, as that is the medium by which it is to be carried to the roots of the plants or trees.

Availability.—To the extent that it is water soluble it is called available, and the price varies according to the availability. In fine ground bone meal it is considered as being quite easy for the plant to reach, but it is not water soluble, the availability being by reason of the fine grains offering easy access to the humic and other acids in fertile soil. Coarse bone meal or coarse ground rock requires that a breaking down process take place before the food is available, therefore some considerable time is taken before the money spent is returned in crop.

Any process for the bringing of the phosphoric acid into available form must take the course of breaking down the combination in which it is found. In the case of calcium-phosphate, or lime-phosphate, the practice is to treat the bone or rock to a dose of sulphuric acid, which has a greater affinity for the lime than the phosphoric acid has, resulting in the release of the latter and forming what is called super-phosphate. This is probably the most available form in which this plant food can reach us, and yet it is to be remembered that if lime is present in any quantity in the soil the natural tendencies will assert themselves and the phosphoric acid for which we paid extra for the sake of its availability will enter into combination with the new found lime, and the availability is gone.

One thing we might mention while on the question of super-phosphate is the matter of the sulfuric acid added to the raw bone or rock.

Many think of this as adding so much sulfuric acid to the soil, but we must remember that once the combination of sulfuric acid with the lime has taken place, we deal only with the combination. This is gypsum, which has certain values as an element of fertilizer.

Some years ago we were accustomed to hear of raw bone and acidulated bone, but since the practice of steaming the bone and grinding to a fine powder came into general use the acidulating seems to have been confined to the treatment of the phosphate rock.

Ground Raw Rock.—There is some agitation of the question of application of fine ground raw rock, but in our dry climate there should be a full consideration of the requirements of this form of fertilizer before much money is spent on it. The plant food is there but the lime with which it is combined must be supplied with some other affinity before the food is available. This can be done in the soil only in the presence of the humic and other acids formed by the breaking down of organic matter such as the nitrogenous plants or stable manure which in turn requires plenty of water. By this is not meant that the ground should be flooded, but that it should be moist enough to promote the decay of the plant fibers.

The same thing holds good in the use of bone meal and if we are to get the early use of the plant food we pay for in these goods, we must be ready to go all the way and supply the means Nature has provided for the breaking down of the combinations which hold tight the much desired phosphorus.

Source of Phosphorus.—There is only one real known source of phosphorus for our plants, namely the rocks of which the soil is made. All other means of supply are temporary stopping places by the wayside. Bones contain only the phosphorus which the animal, in whose body they were, got from the plants it consumed, and which in their turn got it from the soil. The loosening of these elements from their combination with the various rocks, is a matter of slow procedure in the natural course of events, and is particularly so in a climate such as ours, where the moisture is not a great factor. It is attained by the growth and decay of plants, by the production of acids which act on the particles of rock to disintegrate it, and set free the plant food. This condition can be accelerated by the use of water from artificial sources to aid in the work. This is usually termed intensive farming, and is a process that will impoverish the soil if the food supply is not kept up to the point at which the farming started.

Our next paper will deal with the potash side of the question.

MANURE FOR ROOT CROPS.

We recently saw some market gardeners applying manure while they were plowing. It had been spread over the surface as usual, but while the man with the team was going around two others were scraping the manure with forks from the strip that would be turned by the next furrow, into the bottom of the open one. This prevents the root crops from coming directly in contact with the manure but their feeding roots can and do easily penetrate to it.

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To Renew Old Peach Trees.

[Written for the PACIFIC RURAL PRESS.]

Old peach trees often become unfruitful, largely we believe, on account of the system of pruning commonly practiced. When the new growth is annually cut back, the tree spreads farther in all directions and the foliage forms a sort of blanket over the tree which shades the limbs thoroughly. The shade, in addition to the tendency of the sap to rush past everything to the rapidly growing new shoots at the end of the limb, starves buds along the big limbs which otherwise might develop. Thus there is an ever-lengthening course for the sap to travel from roots to leaves and return. There is some evaporation on the way, but the greatest cause of unfruitfulness is then the obstructions which impede such long distance circulation.

Sunburn of exposed limbs is a great factor in this impediment, as are also insect depredations, bark diseases, and mechanical injuries.

Such causes of unfruitfulness would point the way to a remedy such as A. Thiele of Fresno county practises with very satisfactory results. His system is simply to remove about half of the big limbs on such a tree at once in late fall or winter, cutting them back not far from the trunk. The other half is removed a year or two later.

The sudden check to circulation by removal of big limbs forces more fruitfulness in those that are left. Meanwhile new wood grows from the stubs. If this is properly pruned, it will bear the second year and thereafter. There is no entire loss of crop, but the whole top of the tree is shortly renewed.

This permits freer circulation; more elaborate food is returned to the roots and they also take on new life. They sprout new lateral tips and push farther in all directions so that the top and roots are all new, though the old trunk is left.

On account of this latter fact, it is unwise to try to renew trees whose trunks are badly rotted, diseased, or sunburned.

For the same reason, all limbs exposed to the unaccustomed sunshine should be whitewashed to prevent sunburn.

No exception ought to be allowed, when cutting back trees in this way, but every stub must be painted with something that will exclude moisture and keep on excluding it.

A shellac preparation as recommended by H. S. Fawcett of the Citrus Experiment Station was printed in Pacific Rural Press of May 16 for the hotter regions of California.

In Placer county, where a great deal of grafting is done on similar short stubs, hot grafting wax is applied all over the cut surface. The troubles with this are the bubbles that quite often form so that a second application is necessary, and the fact that it doesn't stick well if any sap is flowing.

A hot asphalt paint is used in many places. Prof. W. T. Horne of Berkeley recommends asphaltum cut with benzine to a thick paint, as it does not crack with cold or dryness.

But if the wound has been exposed to wind at any time so that fungus spores have had a chance to get on it, every quarter square inch should be disinfected thoroughly with corrosive sublimate 1 to 1000 before applying the paint. Then all trees should be carefully inspected at least annually, for stubs where the paint has partly come off for any reason. This is extra work, but it adds to the life of the orchard and adds to its productiveness every year it lives.

Roots ought to be pruned when the tops are removed according to John Vallance of Oakland. This can be done by subsoiling and chopping to a depth of 18 inches. It breaks off decadent roots when such breaking won't hurt the trees, and induces new growth on the roots the same as on the tops.

SACRAMENTO VALLEY OLIVES.

The following letters are from the secretaries of the Corning Olive Growers' and Producers' Exchange, Inc., and the Association formed at Marysville last spring for central and northern California.

To the Editor.—Corning and vicinity for a radius of five miles has a large crop of olives in apparent fine condition. Our Association will probably have an output of 300 tons, which may go at a little lower price than last year. There will be considerable grafting of oil olives to those better suited to pickling. Sentiment is growing in favor of a statewide federation of olive growers' associations for the purpose of marketing the crop or putting up pickling plants.

Corning. A. L. DIETRICH.

To the Editor.—The olive crop in our section is only about 75 per cent of normal but is of most excellent quality, and there is a keen demand at $150 per ton f. o. b. We recommend only the Mission variety, and all available nursery stock will be used for planting this winter and spring. There is talk of a state-wide olive growers' association, but it does not seem to be required at present.

Marysville. G. W. HARNEY.

MORE BERMUDA KILLERS.

To the Editor: Distillate has been used quite successfully in this neighborhood for killing Bermuda, Johnson grass, morning glories, and other weeds. Apply in a fine spray or even with a fine sprinkling pot. Very little need be used and the weeds will be dead in a few days.—J. T. Baltimore, Gridley.

To the Editor: Bermuda can be successfully killed in summer when the ground is wet and the weather hot, by applying gas engine distillate with a spray pump or a common garden sprinkler.—L. A. Ridgway, Porterville.

To the Editor: We people of Imperial county have considerable trouble with Bermuda. We don't have enough rain to keep the Bermuda growing and we sometimes shut off the irrigation for a year and cultivate. This kills it. If not convenient to shut off the water, we cover the Bermuda with straw or manure six to eight inches deep. In a few months we remove the manure and have no Bermuda. When using this method it is best to let water on the manure.—J. M. Brady, Brawley.

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WANTED—Dried fruits, nuts, honey, beeswax, beans etc. J. E. Lawrence, 326 Clay St., San Francisco.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

KEEPING SWEET POTATOES.

In other days, the writer lost a large part of a sweet potato crop after it was dry, while awaiting more favorable prices. The tubers rotted swiftly.

He learned better. Sweet potatoes won't keep if dug before mature. To tell whether a sweet potato is mature, break the end off or cut it. If the fresh surface dries after a few minutes they are mature. Sweet potatoes won't keep if they are bruised or the skin broken. Handle them like oranges and more carefully than most people handle peaches. Our grandfather used to wrap each potato in a paper and pack all of them in barrels. He had a cool, dry cellar, and the sweet potatoes kept nearly all winter. They were always thoroughly dried before wrapping, and the potatoes were kept at a uniform rather cool temperature.

FALL RADISHES.

We are enjoying radishes now that were planted in San Mateo county in September. Though we have plenty of fruit, these crisp vegetables make fine relish. They are the least trouble of anything to grow. Just spade the ground, scratch a trench an inch or less deep after raking the soil until no clods are left on top or underneath. Rake over the trench endwise, not quite filling it, with the loose dirt. Then be sure to tamp it down tight with the rake held with the handle perpendicular. We had watered the bed before spading it and we gave it a sprinkle once in a while ever since, when it seemed dry. We aim to have radishes as long as we please, by planting a new short row about every two weeks.

DIVIDING RHUBARB ROOTS.

It is about time to dig rhubarb roots to thin them out and provide some for resetting. F. H. Williams of of San Leandro, Alameda county, practices a method different from that of his neighbors. He doesn't dig them out, but plows the dirt away from each side of the plant and cuts off the excess eyes with a sharp spade. After this the dirt is plowed back, so the old roots, undisturbed, may send out new feeders into the soft ground without the shock of resetting.

It is best to reset the eyes taken off, as soon as a rain has moistened the ground this fall, according to J. B. Mendonca, a large rhubarb grower of the same section. This gives them the benefit of all the rest of the rains and makes them ready for early growth in spring.

STATE GRANGE MEETING.

To the Editor: The annual meeting of the State Grange at Sacramento last week was unusually large and enthusiastic, and the reports showed great progress in the order during the past years. The Grangers as a body favored government ownership of telephone and telegraph lines, opposed home rule in taxation, opposed military drill with guns in the public schools, and were practically unanimous in opposition to the eight-hour law proposal. While sentiment seemed to favor the University building bonds, it was deemed best to take no definite action on any of the proposed State bond issues. Joseph Holmes of Sacramento was elected Master of the State Grange, and Nellie W. Hunt of Napa, its secretary. Oakland was selected for the next meeting and a cordial invitation extended to the National Grange to hold its 1915 convention in California. E. T. PETTIT.

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Weekly Rest Law Not Eight Hour.

The vigorous opposition of the Pacific Rural Press to the proposed 8-hour amendment would call us to oppose the "One Day of Rest in Seven" law if it were the same thing in disguise. Some of our subscribers are misinformed in this regard and are asking us to expose the "nigger." Careful reading of this measure convinces us that the statement by G. L. Tufts, Supt. of the Weekly Rest Day League, backed by Attorney General Webb, and by Prof. W. C. Jones, director of the Law School of the University of California, is correct.

We give the California State Dairy Association's statement of the case first as per Mr. Carver:

"This is another universal 8-hour law under the guise of a Sunday rest law. It seeks to prohibit any employee from working more than six days, or 48 hours in any week. Think of it! Two 8-hour laws at one dose. The Socialists are trying to catch us either going or coming."

Statement by Dr. G. L. Tufts.—"There is an impression getting abroad among the farmers and fruit growers, that Bill 45, One Day of Rest in Seven, is also an eight-hour measure. We ask for space in your excellent periodical to correct this false notion. It is a 6-day bill, not an 8-hour bill. There are no restrictions as to the number of hours one may work during the six days. A person who is on short time, like many substitutes on the street railways, may work seven days a week up to a maximum of 6 6-7 hours per day.

"Attorney General U. S. Webb was asked to give his construction of the bill. He says: 'In my opinion the proposed law does not purport to restrict the hours of labor in six days to forty-eight hours. Except in cases of unavoidable work in caring for live animals, and except in cases of emergency, if one labors, or requires another to labor, for wages during only six consecutive days, the hours of labor are not restricted by this law; but if labor is performed in each of the 7 consecutive days, the total hours of labor in such 7 days are limited by this law to forty-eight hours,' except in the two cases named above. The writer of this statement drafted the bill. He was raised on a farm and he made a special effort to protect the interests of ranches. The bill will allow a dairyman to use his milkers every day without any restriction as to hours. It will permit an owner or renter of a ranch to work every day without any restrictions. It does not prohibit private work. It provides for irrigating and caring for perishable fruits and products any and every day. It would allow smudging to be done on Sunday by hired help who had worked the six preceding days. Also necessary work in milking and feeding live stock. The general rule for the farm will be, Sunday rest for the hired help except necessary work in caring for live animals and in cases of emergency such as a sudden frost requiring smudging.

"This law will work to the advantage of the farmer. It has been demonstrated beyond doubt that both men and animals can do more work and better work with a weekly rest day. It increases the efficiency of labor and reduces the liability to accident. Fatigue is one of the chief causes of accidents. So let no one be deceived by the forty-eight hour statement printed by mistake on the ballot above the law itself, or by the false statements being circulated that this is an eight-hour law. It will allow anyone to choose either Saturday or Sunday as their rest day. It is no infringement on personal liberty. Men want the liberty to rest one day of the week without losing their jobs, not the liberty to work all the time. There are 100,000 toilers in California who are held in bondage of seven-day labor."

Statement by Prof. W. C. Jones of the University Law School.—"It is my opinion that the bill as framed would permit a hired hand on a farm, after he had worked for ten hours or more per day during six consecutive days at general farm work, to do the necessary work on the following Sunday in caring for live animals, such as milking cows and feeding the stock. The provision making it unlawful 'to hire, employ or require any employee, apprentice, servant or other person or persons to work at or engage in any trade, business, profession or occupation for more than six days in any calendar week of seven days,' is sufficiently qualified to allow such additional work on Sunday by the proviso, 'provided, however, that the above provisions of this section do not apply to unavoidable work in caring for live animals.'"

CALIFORNIA WATER RIGHTS.

Certain objections to the referendumed Water Commission Law have been published, none of which is founded on fact; not a few of them have been manufactured by deliberately misquoting sections of the law; others appear to be deliberate misstatements.

One of these false objections is that the Water Commission Law "will affect the values that are produced in land by irrigation, in that it provides that upon the sale of lands to which water has been made appurtenant, no value shall be added for the water other than the amount that has been paid to the State for the privilege." The Water Commission Law contains no such provision, nor anything that can be twisted or tortured into such a provision.

Another false objection is: "The cost and expense of the (Water Commission) hearings are taxed against the parties appearing just as they

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My orchard looks better than ever and the crop is bigger and better. Every acre this fall will be planted with your inoculation as the results warrant it.

It solves the fertilizing problem for orchard work.

Yours very truly,
(Signed) D. H. OSBORN.

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WESTROBAC is always fresh and vigorous when it reaches you. An important point, because bacteria grow less effective the longer they are kept.
WESTROBAC is a pure culture of acclimated nitrogen gathering bacteria, bred fresh to fill each order.
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The nursery that helped to make Santa Clara Valley famous.
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Trees that grow and bear true to name. Now booking orders for next season. Write us now about what you will want.

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French and Imperial Prunes, Bartletts and other Pears; Tuscan and Phillips Clings, Fay Elbertas and other Peaches. Cherries, Plums, Apples, Grafted Walnuts, etc. Stock pure and of best strain. Place orders promptly. Prices reasonable.

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Grown on Sandy Loam Soil

No Spike Roots.
Almonds on Almond & Peach root.
All Varieties of Fruit Trees for sale.
Write for Special Prices.

Land for sale in large and small tracts on small terms. We plant and care for orchards and guarantee a stand of 95%.

Plenty of water.

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Grown on Russian River Sandy Loam soil without irrigation are best for several reasons. Our prices are right. We ship subject to approval. Write for price list.
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Price list, describing over 200 species and varieties, mailed free upon request. Upon receipt of 15c in stamps, we will mail you copy of our new Illustrated Catalog. Color plate alone is worth the price.
THE DEAN IRIS GARDENS,
Moneta, California

are in trials in court, and the burden involved must in many instances be too great to justify the small farmers or claimants to small quantities of water, in the establishment of their claims, and result in the forfeiture of these rights."

The exact contrary of this statement is true. The cost and expense of hearings before the Water Commission will not be taxed against the parties. In Oregon and Wyoming, upon whose Water Commission Laws our referendumed law is based, it costs each water-right claimant about ten dollars to get his water right finally and actually settled.

Water rights on the Santa Ana River, in Southern California, have been "finally settled and determined" four separate times by as many enormously expensive law suits. A fifth suit has just been brought to "settle" them all over again. But no number of separate lawsuits can ever settle water rights on the Santa Ana or anywhere else. That is the reason why Oregon, Wyoming and other States have created Water Commissions. There is no more litigation over water-right titles in those States. There will be no more such litigation in California when this referendumed Water Commission Law goes into effect.

Another false objection is: "The farmer could not even sink a well without applying to the commission." The Water Commision Law contains no such provision. But, under our present law, if a farmer sinks a well, another farmer may sue him to compel him to stop pumping from it.

Another misleading statement is this: "All water rights are forfeited unless proven before a political commission at San Francisco or Sacramento." To back up this statement a quotation is made from section 34 of the Water Commission Law. But it quotes only a portion of the section, stopping at a comma and deliberately neglecting to quote the rest of the section. The portion omitted provides that no water right is forfeited except under conditions similar to those under which a person forfeits his real estate under the laws of this State—and that occurs only under the most aggravated circumstances of willful neglect on the part of the owner. Everybody's water rights are as carefully guarded under this Water Commission Law of California as they are by the Water Commission laws of Oregon and Wyoming, which this California law follows, and with which the people of these States are satisfied.

The California State Dairymen's Association opposes the Water Commission law on the ground that "it favors the interests of water corporations and power companies, all of which favor it." The fact that practically all attorneys for California water and power companies are opposed to this law ought to be proof that, instead of favoring it, the water and power corporations are opposing it.

The above are samples of the objections that are being urged against this law. If space premitted, it could be shown that all the objections put forward are as equally without merit as are those which have been shown above to be at least mistakes on the part of those who have made them. GEO. C. PARDEE,
Chairman State Conservation Commission. Oakland.

NON-SALE OF GAME.

There are many problems in connection with wild life conservation on which we ought to have more information. Of the desirability of stopping the sale of wild game, however, there would seem to be small question.

The Non-Sale of Game Act has suffered in repuation from the standpoint of certain citizens, because they feared it would tend to secure a benefit to the sportsman at the expense of the rest of the public. A careful examination of the facts seems to show this fear to be groundless.

The welfare of each citizen depends on the general prosperity of the state. The prosperity of the state depends in large measure upon the maintenance of its natural resources and natural attractiveness. The wild game is a large item in this attractiveness. Destroy it, or permit it to be destroyed, and you strike a blow directly at the prosperity of the state. As a matter of fact, fifty ordinary hunters are benefited by this law to every one gun club preserve man favored by it; and for every hunter of any kind who is favored by the law, there are seventeen citizens who benefit who do not hunt at all, but who nevertheless are intrested in the perpetuation of the wild life.

Do you want your game to be wiped out and destroyed for the exclusive benefit of the traffickers, the game dealers, the French restaurants, and the pampered city epicures of San Francisco? This is virtually the question every California ranchman and farmer should ask himself when he comes to No. 18. The country does not profit from sale of game. On the contrary, sale of game tends directly toward the utter destruction of the species most worth while.

What is the opinion of the greatest agricultural research institution in America on this subject? On page 254 of the Yearbook of the United States Department of Agriculture you will find these words, "The free marketing of wild game leads swiftly to extermination."

The Non-Sale of Game Act was enacted after careful consideration by the legislature. It was duly signed by Governor Johnson. Particular pains were taken to guard the interest of the farmer, as is shown by the fact that wild geese and rabbits were excepted from its operation.

California's neighbor states have all stopped the sale of game, and while no appreciable damage has been done to agricultural or other interests, the beneficial results of the measure have been apparent. Many of the waterfowl raised by these neighbor states migrate into California and are here slaughtered for the market! Fairplay is a tradition of Californians, and it is unthinkable that the voters will decide otherwise than in favor of this law, when they know the facts.

WALTER P. TAYLOR,
Sec. Ass'n for Conservation of Wild Life. Berkeley.

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Other pears cannot now compete with the California grown, and the profits have already begun to rise.

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We have a fine block of Pear Trees in Bartlett, Comice, Winter Nelis, Anjou and other varieties. We cut our buds from selected parent trees and propagate from the finest strain of BARTLETT.

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Better, stronger trees—Larger, finer fruit—Bigger Crops.

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Agricultural Review

DECIDUOUS FRUITS AND NUTS.

Several varieties of apples are successfully grown on the flat land near Parlier, Fresno county.

Oakdale Almond Growers shipped five cars of almonds this season. Last year they shipped less than a carload.

Five carloads of dried prunes and one of almonds were recently shipped in one week from Corning, Tehama county.

On Oct. 23, the California Fruit Distributors had shipped 14,444 cars of fruit as compared with 11,946 to the same date last year. Very little besides grapes are going out now.

At the recent convention of the Cal. Ass'n of Nurserymen, the following officers were elected: Prest., F. H. Howard, Los Angeles; vice-pres'ts, John Vallance, T. E. Mabee, L. M. Wheeler, Thomas Jacobs, and John Morley; Sec'y-Treas., H. W. Kruckeberg.

The earliest walnut crop ever known in Ventura county is practically all shipped. Seventy-five cars of 12 tons each is their output. Ninety carloads of California walnuts have been shipped east via Panama canal. The innovation of packing nuts in four-pound bags has proved very popular, as it enables the resale of guaranteed goods in their original packages in small enough amount for one family.

CITRUS AND SEMI-TROPICAL.

The Butte county olive crop is earlier this year than last, and picking of the Missions is well under way. At the Tulare County Growers' Ass'n plant they have 100 iron tanks of capacity for half a ton of olives each. About 10 tons are now in process and they expect to handle 125 tons. It will be remembered that this project has recently been inaugurated because the Lindsay Olive Growers' Ass'n could not find satisfactory buyers for its crop. At Fair Oaks there seems to be an impression abroad that outside companies are keeping out, compelling the growers to sell to the local company. The loca company needs more capital and is seeking to force growers to accept 25 per cent of the payment for their crops in company stock at par value. The stock is said to be worth $120 per $100 share, so it would look like a good investment for those who have money to invest; and it certainly would strengthen the Fair Oaks Fruit Co. to have a large number of stock-owning growers. Nevertheless, the growers dislike to be forced into it and are charging combination of the olive packers to bear down the price. The Fair Oaks Fruit Co. has offered to pay a reduced price to growers who do not want to buy stock. Elsewhere in our columns will appear notes from other olive growers' associations stating that a sentiment is growing in favor of a state-wide olive growers' association which could handle the crop as the walnut growers are handling theirs, or else put up pickling plants of their own as has been done in Tulare county.

Interest in the avacado is widespread. F. O. Popenoe of Altadena sends us a list of 41 growers from Butte county south (mostly south) who have one-half to 26 acres each, averaging about five acres. A subscriber from Mexico was recently in our office, contemplating the topworking of his mango orchard to avacados. It wouldn't work.

Citrus growers of Butte, Placer and Sacramento counties recently incorporated as the "Superior California Fruit Exchange" with M. L. Bidwell of Sacramento as manager. It is affiliated with the Cal. Fruit Growers' Exchange.

The Yuba county citrus district in the thermal belt of the eastern hills is to be considerably developed this winter by orange planting.

Nevada county has been shipping pomegranates in small quantities.

GRAPES.

Tokays in the Lodi district were hurt by the recent showers. The moisture favors mildew and rot.

Up to Oct. 24, the Lodi section had shipped 2113 cars of grapes East as against 1750 to the same date in 1913.

Sawdust-packed grapes for the East may have to compete with more than the usual number of Spanish grapes if the Spaniards can finance their shipments.

The Madera county raisin crop is estimated at 1500 tons. They are being stemmed at Madera and sent to Fresno for seeding. The Madera stemming operations will last two weeks.

The Stanford Vina ranch is to pull out its great 1600 acre vineyard and plant fruit and alfalfa. They now have a bonded warehouse for grape products, but the manufacture of wine and brandy by a great educational institution is not deemed wise, nor very profitable in this case partly on account of the age of the vines and also the prevalence of Johnson grass.

CLINGSTONE PEACH TREES

California Cling Peaches, superior in size, substance, flavor and keeping qualities — the highest standard! The canning peach in demand by all the world.

TUSCAN — Ours are the IMPROVED ROUND TUSCAN. Firmer, more symmetrical, more uniform, finer grained, less subject to windfall and splitpit than the oblong Tuscan, commonly propagated, and preferred by canners to the extent of $2.00 to $5.00 per ton.

PHILLIPS—Preferred by canners to any other late variety—small but meaty—clear yellow to the pit. We cut our buds from a block of trees that are an exceptionally good strain of this variety.

Also all other standard varieties. You'll get the best from us—Tell us your wants.

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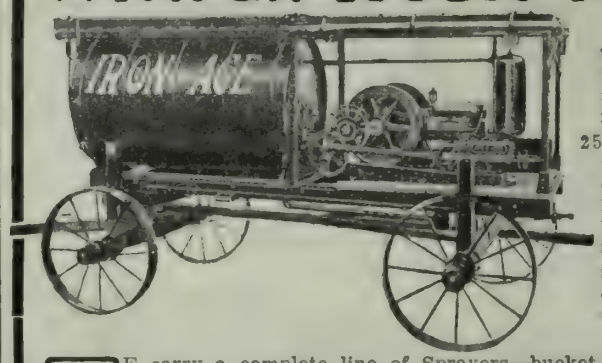
SPRAY With an IRON AGE



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"The Bean Is The Best"

You want a sprayer that will throw the mixture on at the necessary high pressure—a sprayer that will stand the wear and tear of hard service in the field—a sprayer that will last—a sprayer that is easy to operate and does not require constant repairing and adjustment. Then get a "BEAN." Made in five sizes—all very reasonably priced.

Send for Catalog 28-A—Just Issued

It illustrates and describes the entire BEAN line of Hand and Power Sprayers and Pump Accessories, and explains the 21 Distinctive Bean Features; Porcelain lined Cylinders, Rustless Ball Valves, Underneath Suction, Steel Frames, Pressure Regulator, Bean Patented Cut-off, etc., the result of 27 years' experience.

Get Catalogue 28-B for Centrifugal Pumps; 28-C for Opposed Gas Engines

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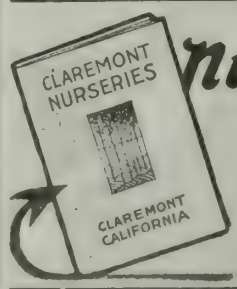

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CLAREMONT NURSERIES, INC.

1300 Indian Hill Blvd. Claremont, Calif.

In this issue will be found many new fall announcements, notably from our nurserymen. It is now time to commence figuring upon the list of trees you expect to buy and it will pay to write for catalogue now.

HOP GROWERS ORGANIZE.

Hop growers of Mendocino county recently organized along the plan of the Associated Raisin Co. of Fresno. They at once started a party of organizers who held a meeting of Sacramento county growers and then went to Oregon where they organized several sections. They hope to have State associations in Cal., Ore., and Wash., combining them into one central exchange to look out for the common interests. Hop prices have lately dropped below the cost of production—hence the growers had to organize or go out of business.

FRUIT GROWERS' CONVENTION.

Following are the agricultural topics and speakers for the forty-fifth California State Fruit Growers' Convention to be held in the old Normal School building and Hotel Parlor, Los Angeles, Nov. 10 to 14. The county horticultural commissioners meet at Hotel Clark Nov. 9 and 10 to discuss their work.

Nov. 10, 1:30 p. m.—(1) Cultivation of the Potato, E. H. Phreaner, Placerville.. (2) Fungus Diseases of the Potato, W. V. Shear, Middle Island. (3) Insect Pests of the Potato, Wm. Garden, Stockton. (4) Suggestions called forth at the Stockton Convention, Prof. S. B. Doten, Reno, Nev.

Nov. 10, 7:30 p. m.—(1) Literature of the Farm, Mrs. Emily Hoppin, Woodland. (2) Firing Frost, J. E. Adamson, Pomona. (3) Relations between Horticultural Commissioners and Nurserymen, C. W. Beers, Santa Barbara. (4) The Thermometer in the Orchard, (Lantern slides), F. A. Carpenter, Los Angeles.

Nov. 11, 9 a. m.—Address of welcome and response. (1) Work of College of Agriculture Among the Farmers' Wives, Miss Lilian D. Clark, Berkeley. (2) Packing, Growing and Marketing Along the Atlantic Coast, J. H. Hale, Fort Valley, Ga. (3) Semi-tropical Fruits Which Give Promise to Cal., F. O. Popenoe, Altadena. (4) Semi-tropical Fruits, C. P. Taft, Orange. (5) Combating the Parlatona Scale, A. J. Shamblin, Mecca.

Nov. 11, 1:30 p. m.—(1) Standardization, Prof. C. I. Lewis, Corvallis, Ore. (2) Report on Proposed State Standardization Law, H. Weinstock, San Francisco. (3) Uniform Horticultural Laws, M. McDonald, Portland, Ore. (4) Marketing, G. Harold Powell, Los Angeles.

Nov. 11, 1:30 p. m.—1. (a) Jelly Making. (b) Syrup Hydrometer. (c) Home Production. (d) Building a Market. (e) How to Exhibit.—Mrs. Hilda B. Nielson, Sebastopol. 2. (a) Home Canning of Fruits and Vegetables. (b) Equipment. (c) Method of Packing. (d) Marketing in Foreign Lands. (e) Money in Marmalade.—Mrs. Sarah Roberts, Grass Valley.

Nov. 11, 7:30 p. m.—(1) Decay in Fruit, Prof. B. B. Pratt, Los Angeles. (2) Farm Credits, Col. H. Weinstock, San Francisco. (3) The Mango (Lantern), F. W. Popenoe, Washington, D. C. (4) The Scale Insects (Lantern), E. O. Essig, Berkeley.

Nov. 12, 9 a. m.—(1) Soil Hygiene, G. E. Bailey, Los Angeles. (2) Trend of Opinion as to Soil Fertility, Dr. C. B. Lipman, Berkeley. (3) Review of Fertilizer Experiments at the University Station at Riverside, Dr. H. J. Webber, Riverside. (b) Cover Crop Experiments, W. M. Mertz, Riverside. (c) Root Stock Experiments, W. B. Bonns, Riverside. (4) The County Horticultural Commissioner and the Farm Adviser, H. A. Weinland.

Nov. 12, 1:30 p. m.—(1) Soils, C. A. Jensen, Riverside. (2) Water Requirements of Plants, J. W. McClane, Riverside. (3) Fertilizing Citrus Citrus Crops, C. W. Leffingwell, Pasadena. (4) Review of Practical Experiments in Fertilization, Prof. R. S. Vaile, Riverside.

Nov. 12, 1:30 p. m.—(1) Women in Horticulture, Miss Kate Sessions, San Diego. (2) Opportunities for Women in Horticulture, Mrs. Myrtle Shepard Francis, Ventura.

Nov. 12, 7:30 p. m.—(1) Summer Cover Crops in Southern California Orchards, C. S. Milliken, Riverside. (2) Pruning (Lantern), G. P. Weldon, Sacramento. (3) How to Develop Our State, Dr. T. F. Hunt, Dean, Berkeley. (4) Horticultural Quarantine and the Parcel Post, A. S. Hoyt, Los Angeles.

Nov. 13, 9 a. m.—(1) The Orange, C. C. Chapman, Fullerton. (2) Chemical Studies of Oranges, H. D. Young, Riverside. (3) Production of Available Nitrogen in Citrus Soils, I. G. McBeth, Riverside. (4) Citrus By-Products, C. P. Wilson, Riverside.

Nov. 13, 1:30 p. m.—(1) The Future of the Lemon, C. C. Teague, Santa Paula. (2) New Fumigating Machine, G. P. Gray, Berkeley. (3) Fumigation, R. S. Woglum, Pasadena. (4) Newer Insecticides, M. R. Miller, Berkeley.

Nov. 13, 1:30 p. m.—(1) How Can a City Woman Make a Living in the Country? Mrs. Emily Hoppin, Woodland. (2) Home Economics for the Woman in the Country Home, Miss Ednah Rich, Santa Barbara.

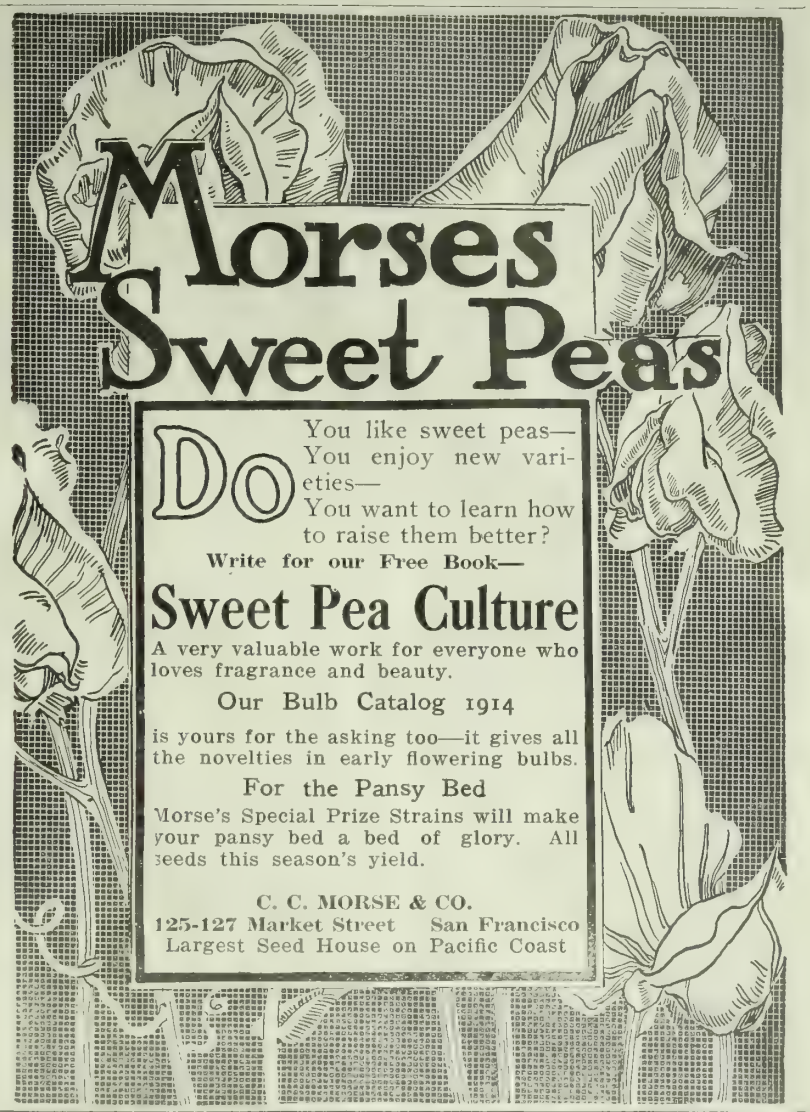
Nov. 13, 7:30 p. m.—(1) Citrus Insects in the Mediterranean Countries (Lantern), Prof. H. J. Quayle, Riverside. (2) Melazuma of Walnuts and Citrus Gum Diseases in California and Florida, Prof. H. S. Fawcett, Whittier. (3) Field Experiments, J. E. Prizer, Chula Vista. (4) Walnuts, Carlyle Thorpe, Los Angeles.

Nov. 14, 9 a. m.—(1) Orchard Data, G. W. Hosford, San Dimas. (2) Mexican Orange Fly, D. L. Crawford, Claremont. (3) Pear Blight, E. A. Gammon, Hood. (4) The Pear Orchard, Hayward Reed, Sacramento.

Nov. 14, 1:30 p. m.—(1) Work of the State Insectary, H. S. Smith, Sacramento. (2) Bud Selection, A. D. Shamel, Riverside. (3) Report of Committee on Legislation, C. C. Teague, Santa Paula. (4) Report of Committee on Resolutions, R. C. Allen, Bonita.

Nov. 14, 7:30 p. m.—The Fruit Awakening of the East, J. H. Hale, Fort Valley, Ga. (2) Citrus Culture in Cal. and Cuba (Lantern), Prof. H. S. Fawcett, Whittier. (3) Types of Chlorosis in Plants, J. T. Barrett, Riverside. (4) Mendel's Laws of Inheritance and Their Relation to the Breeding of Citrus Fruits (Lantern), Dr. H. J. Webber, Riverside.

A five-acre ranch of cassabas near Corning yielded 12 tons per acre this season.



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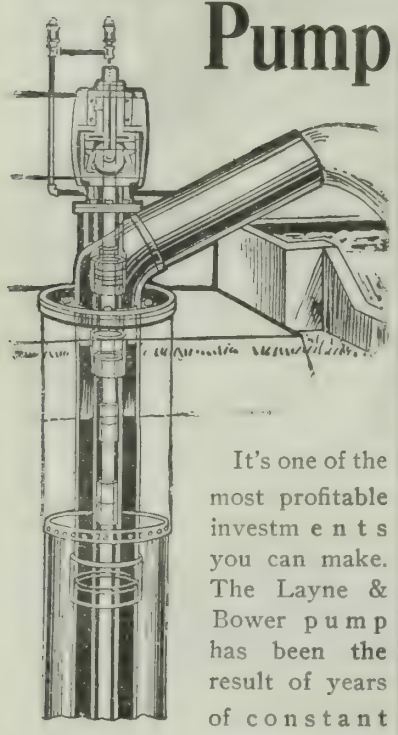

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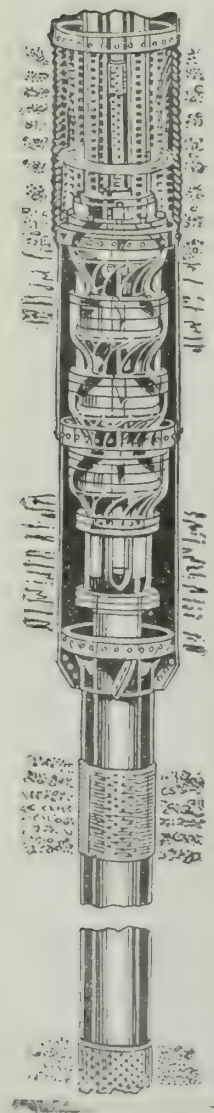

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Mechanical Power on the Farm.

SPARK PLUG TROUBLES.

[Written for the PACIFIC RURAL PRESS.]

Don't cuss your automobile when it won't run. It hasn't any sense. It runs if you provide and keep up the right conditions. So if it doesn't run, you may be sure it is doing its level best—the engine is obeying the inexorable natural law which prevents it from running under the conditions you are allowing to exist. It can't alter those conditions, so it is up to you to find and fix them. In doing this, always look first to the part most likely to be out of order. This is best judged by the conditions under which it stopped or has stood since last running.

"The commonest trouble with automobile engines is a dirty spark plug," says Mr. Collins of the Ford Motor Co. The dirt which fills the 1/32 of an inch space the spark is supposed to jump, furnishes a conductor as if a wire were put there, so there is no spark and no ignition.

The plug gets dirty for several reasons. Too much gas in proportion to air leaves soot because it cannot all burn up in the limited time between strokes. If the cause of dirty plugs is too much gas, you may know it by the black smoke from the exhaust. The engine will also beat up and not much power can develop. Reduce the gasoline by turning the needle valve to the right until the exhaust is practically colorless.

Sooting of the spark plug may be due to too much cylinder oil, not all of which burns, and the carbon left also heat up and not much power highest grade of light gas engine cylinder oil should be used. Steam cylinder oil leaves more carbon and also is too gummy. This is especially important in cold weather.

If the porcelain, glass, or other insulation in the spark plug is cracked, allowing short circuit, there may be a spark in the cylinder intermittently. When such skipping is noticed, don't test the plug, for it doesn't always skip when outside the engine. But take it out and try a new one in its place. If the engine runs alright, the old plug was probably cracked and short circuiting.

Sometimes a path for the current is made by a drop of oil on the point of the plug. Sometimes points are adjusted too far apart for the spark to jump, or the points may have become pitted with the same effect.

Always carry some extra plugs.

EQUIPPING A FARM SHOP.

A farmer boy whose father bought some old tools at an auction and thus inspired his son to learn to do his own repair work and some for the neighbors, is now farming for himself. He gives the following instructions in an eastern farm paper for equipment of a farm shop:

Perhaps the first to consider would be the shop. It need not be very large or expensive but should be fairly tight so one can do some work during the winter. Ample windows should be provided. An old stove can be rigged up during the very cold weather when one wishes to work.

Do not buy a forge smaller than 24x35, with a 12-inch fan. That will take care of any work you are likely to have. It will cost about $10. Buy a solid steel or wrought iron anvil with tool steel face. Do not buy a cast anvil, or one weighing less than 75 pounds. Anvils cost between 10 and 12 cents a pound.

A box vise weighing between 45 and 60 pounds is all right and will cost close to $5. A horizontal bench drill will prove quite satisfactory and does not cost over $2. Of course a post drill will give the best satisfaction if one can afford the extra cost.

Stocks and dies for cutting threads on bolts, rods, etc., are quite indispensable. The price ranges from $1.50 to $20. I have a set consisting of 7 sizes, from ¼ to ¾ inch, costing about $9. However, a cheaper set will answer the purpose fairly well.

A 3-pound hammer for heavy work, such as sharpening plowshares, and a 1½-pound hammer for lighter work. A pair of straight-lipped tongs and a pair of bolt tongs will be necessary. It will not take the average farmer long to learn how to make a pair of tongs, cold chisels, punches, etc. A few drill bits, a couple of files of different sizes; then you can add a tool now and then as you need them and can afford them, such as a set of "S" wrenches, hacksaw, bolt-clippers, and the like.

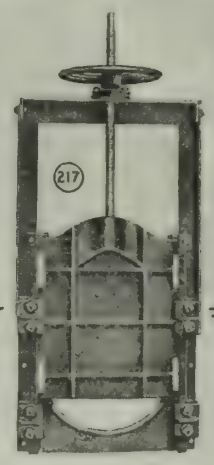
You may be along in years and not feel like doing the work, but if you have a boy you should rig up a shop for his sake. I don't believe there is a boy who doesn't like to tinker around a shop. Let him hammer away any way he wants to and it will surprise you how soon he will be doing all the repairing necessary on your farm. He will like the farm better for it and when he grows up he will have a shop on his farm where his boys will learn to fix up things the same as he did in your shop. You know that if your father had had a shop you would have learned how to do the blacksmithing necessary on a farm and you would be thankful to him for it.

OILY ENGINES WEAR OUT.

[Written for the PACIFIC RURAL PRESS.]

Oiling your gas-engine foundation isn't any use. Yet many folks put and spill so much oil on their engines and farm machinery that it drips. That is worse than no oil at all in some cases, and almost as bad in many more.

The object of lubricating-oil is to provide a very thin film between bearing surfaces, so the motion won't grind them out of shape. More than that much oil is a waste. Moreover, it collects dirt on and around the bearings. Some of that dirt gets into them and grinds till everything is loose and much power is lost. Slow-moving bearings much exposed to



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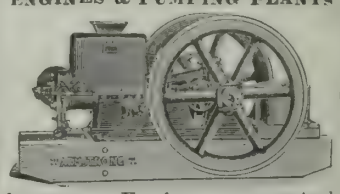

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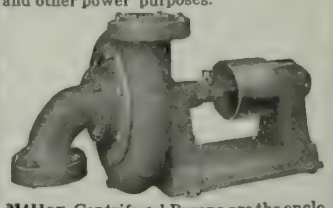

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dirt had better be left unoiled.

In a gas engine too much cylinder-oil means that the 20 per cent which reaches the combustion chamber is not completely burned. This leaves a carbon deposit which wears the piston-rings, befouls the spark-plugs, and overheats the cylinder, and is likely to stop the engine. It reduces the power, in any event.

Worn piston-rings mean leakage of force past the piston. The carbon particles which wear the rings away get hot by the friction and pre-ignite the fuel. That causes pounding.

Aside from unburned carbon from excessive cylinder-oil, too, is the unnecessary coating of oil on spark-plugs, which prevents ignition altogether in some cases. If you have a magneto, too much oil is oftener the trouble than too little, especially after dust has collected on it.

A little oil is good; more is not better.

TRACTOR FUEL COSTS.

[Written for the PACIFIC RURAL PRESS.] by W. H. Kritzer.]

Keep the following in your pocket when you go to buy a tractor or any other oil burning engine. It tells at a glance what will be the fuel cost for any sized engine for any common price of fuel without regard to the kind of fuel, if the agent tells you accurately the quantity used per brake horse power.

Pints	PRICE OF OIL PER GALLON													
Per H.P., hour	2c	3c	4c	5c	6c	7c	8c	9c	10c	12c	14c	15c	18c	20c
1.20	....	.300	.450	.600	.750	.900	1.05	1.20	1.35	1.50	1.80	2.10	2.40	2.70	3.00
1.10	....	.275	.413	.550	.688	.826	.963	1.10	1.24	1.37	1.65	1.92	2.20	2.48	2.75
1.00	....	.250	.375	.500	.625	.750	.875	1.00	1.13	1.25	1.50	1.75	2.00	2.25	2.50
.90	....	.225	.338	.450	.563	.675	.788	.900	1.01	1.13	1.35	1.58	1.80	2.03	2.25
.80	....	.200	.300	.400	.500	.600	.700	.800	.900	1.00	1.20	1.40	1.60	1.80	2.00
.70	....	.175	.263	.350	.438	.525	.613	.700	.789	.87	1.05	1.23	1.40	1.58	1.75
.60	....	.150	.225	.300	.375	.450	.525	.600	.675	.75	.90	1.05	1.20	1.35	1.50
.50	....	.125	.188	.250	.313	.375	.438	.500	.570	.63	.75	.88	1.00	1.13	1.25

Example: — A 30 horsepower tractor engine operating on gasoline and using 1 pint per horsepower per hour with the price of gasoline at 16 cents per gallon, will cost 2 cents per hour per horsepower, or 60 cents per hour; and if the tractor is running for 8 hours the expense for the liquid fuel would be $4.80; which would not include the cost of lubricating oil, and so on, all of which would be extra.

It must be borne in mind, also, that these rates are on the basis of the brake horsepower. A 30 horsepower gas engine developing 30 horsepower will use more total fuel than developing 20 horsepower and at a slightly higher rate per horsepower.

BUYING ELECTRICITY.

[Written for the PACIFIC RURAL PRESS.]

A bunch of farmers back in Griswold, Iowa, have clubbed together and built an electric light and power line from the city limits to their homes, dividing the cost equally among themselves. It connects at the city limits with the city power company's lines, and the city furnishes all repairs, delivering the current at the city rates. Another bunch of farmers built their own line from the city limits and keep it in repair. A meter is installed at the city limits and the charge by the power company is based on the total used by the cooperative organization, which effects a large saving for the farmers. The total cost is then prorated among themselves on the basis of the amount used as indicated on individual meters.

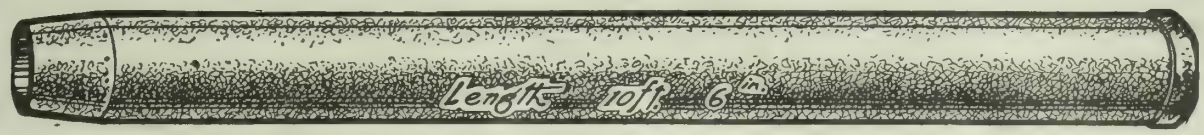
MACHINERY NOTES.

Two new fuels have recently been put on the market for automobiles and gas engines. One is said to be made chemically from kerosene, is practically odorless and sootless, and may be used in any engine without alterations. Its lack of soot is probably the reason for the claim that it heats the engine less rapidly. It does not evaporate so readily as gasoline and is cheaper. The other is made from the residue of crude oil after gasoline and kerosene have been taken out. It is claimed to ignite as readily as gasoline, to give 15 per cent more mileage, and to be several cents cheaper. It gives off a light bluish exhaust and deposits a soft carbon in the cylinder which yields readily to kerosene.

A $20 repair bill on an Excelsior belt-drive motorcycle run 8,500 miles in seven years at a cost of one-fourth of a cent a mile for gasolene, is the record of W. F. Reynolds of the American Yeomen Lodge. He claims to have been out practically every day in all kinds of weather. Careful driving, that!

In a prune orchard recently irrigated and cultivated a week later we noticed all degrees of colors from light gray dry soil to deep black heavy mud in small patches only a few feet apart all over the orchard. Good indication of unequal irrigation. Question: Did the irrigator resolve to do a more uniform job next time?

The Only Scientifically Constructed Surface IRRIGATION PIPE IS
THE "AMERICAN"
LOCK SEAMS WITHOUT RIVETS. NO ROUND SEAMS TO LEAK



Will outlast any other pipe made—easily handled—best for irrigating alfalfa. (We make and recommend Riveted Pipe for underground use only.) Write for illustrated Catalogue Irrigation Folder, and ask us "How to Test Pipe."
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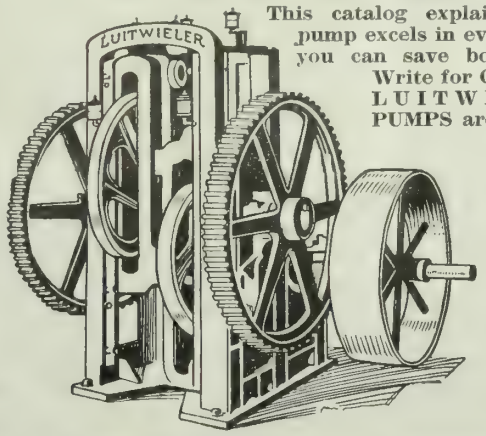

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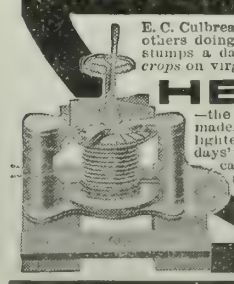

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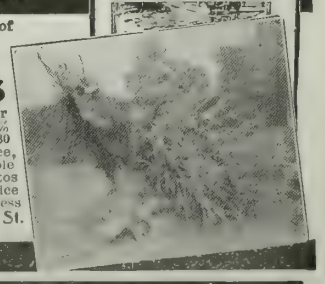

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With the Livestock Men

A meeting of dairymen to form a Yolo County Dairymen's Ass'n was held Oct. 30 in Woodland.

It is estimated that 40 carloads of hogs will be shipped out of Klamath county, Ore., this fall and winter.

The Tulare Cooperative Creamery and the Good Luck Creamery of Tulare paid $33,167 for butterfat received during Sept.

Cattle shipments from Klamath county, Ore., to California butchers this year total about 9,000 head averaging about $55 to the grower.

Aralia de Kol, belonging to A. W. Morris and Sons, died last week of milk fever. She held the world's record for a 12-year-old butter producer.

Waterford, Stanislaus county, sheepmen quit clipping their sheep because the price of wool it too low. Of the 65,000 that were to be shorn, 25,000 were not touched.

Seven carloads of sheep were recently shipped by boat from the Sacramento section to Petaluma, where they were transshipped to the Noonan Meat Company's packing house at Santa Rosa.

The Visalia Cooperative Creamery put out 5,000 pounds of butter less in Sept. than the month before, but the increase of 2 cents a pound paid for fat, brought the total to $27,500 to the dairymen.

Bottling pasteurized milk while hot is recommended by the U. S. Dept. of Agriculture to reduce chance of contamination and to handle the milk at least expense. The bottles should be steamed two minutes just before using.

The Sam Woods ranch near Woodbridge, San Joaquin county, occupied by Mr. Woods for 55 years, has been bought by Henry Thiessen who expects to install a 200-cow dairy. The place contains 80 acres of natural grass and about 120 of alfalfa.

Stockmen of the Bitterwater and Annette districts in Kern and San Luis Obispo counties are negotiating for the building of a big cattle corral at Lost Hills which will become a shipping point on account of road improvements making this possible.

The Secretary of the American Meat Packers' Ass'n, of New York, asserted, at their recent convention, that the world's meat supply is vanishing. They hope to have the oleomargarine tax removed and also to get government aid to stamp out tuberculosis.

Receipts at Portland Union Stock Yards for week ending Oct. 23 were: Cattle, 1447 (moderate), prices strong, well finished steers, $7.50 top. Hog receipts, 6739, rather light weight stuff that ought to be in the feed lots. Tops closed at $6.90. Sheep receipts, 6578. Strong demand especially in yearling stock at about $5.60.

The fourth annual Pacific Livestock Exposition to be held at Portland Union Stock Yards Dec. 7 to 12, is encouraging formation of large enough parties to charter special cars. This exposition is strictly educational, having no amusement features. There is no admission fee, and some of the best stock of the West will be assembled there.

Chicago, the city of the National Dairy Show and the International Livestock Exposition, is within the territory quarantined on account of the tuberculosis scandals of the Elgin county. To permit free exhibition of stock at these great shows, the U. S. Secretary of Agriculture signed an order permitting stock to be shown there without the usual tests and inspections provided they are returned to the State whence they came.

The Oregon Agricultural College says that hog feeders may make 100 per cent on money invested judiciously in protein feeds to be given to fattening hogs. Half again as much weight of milk as grain gives the hog much more efficient use of the grain. Tankage is another valuable protein addition to grain for fattening purposes. The College has purchased in Oregon the foundation for a purebred Hereford herd to match their purebred Shorthorns.

Jerseys producing a thousand pounds of butter 85 per cent fat seem to be getting common. Reprints by J. R. Sibley from the Jersey Bulletin up to Oct. 1914, show half a dozen such cows whose records were completed before Nov. 10, 1913. Sincetthen and before Sept. 17, 1914, three more had done the trick, two of them beating the highest old record. Two Holsteins hold still higher records. Official testing and recording on the Register of Merit are gaining popularity among smaller breeders as well as those having large herds.

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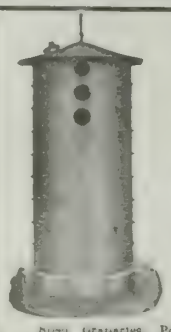
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RICE PRODUCTS FOR HOGS.

[Written for the PACIFIC RURAL PRESS.]

Rice bran and polish have been known to stock feeders in the southern States for a great many years, but it is only since the introduction of rice growing on a commercial scale that they have been recognized as stock food in California, and even yet there is little practical knowledge of their worth.

Their chief advantage to farmers of this State lies in their relatively high content of carbohydrates, and thus makes them a most desirable feed in connection with alfalfa.

Up at Biggs, Butte county, there are many farmers who have been feeding rice bran and polish to hogs during the past year and in every case reported, the results were entirely satisfactory.

Among those who vouch for its value is Frank Watson, who usually turns off a large number of hogs each year. Last fall he purchased a band of acorn hogs from Tehama county, averaging about 150 pounds each, with the intention of fattening them.

They were immediately put on a barley ration, but the weather was bad, also housing facilities, with the result that after six weeks they had made little or no gain.

As a last resort, rice bran was substituted for the barley, and according to Mr. Watson he was able to market them in three weeks' time in good condition.

In other States where rice is grown rice bran and polish have often been adulterated with hulls at the mills, thereby greatly reducing their feeding value.

It is, however, the declared intention of the California mills to turn out a pure product in order to build up a reputation for rice products among the stock men of this State.

The fig market East is still demoralized.

Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

DAIRY CATTLE

HOLSTEINS WANTED—Want heifer calves or yearlings, registered or grades, in exchange for gilt-edge alfalfa in Tulare County. Will make liberal deal, but stock must be well-bred, nicely marked, fine type, healthy and vigorous, and from heavy producers. R. H. Whitten, R. 5, Box 646, Los Angeles, Cal.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

TEN REGISTERED HOLSTEIN COWS for sale. Young and many with big records. Also a few well-bred heifers and bulls up to nine months old. K. W. Abbott, Milpitas, Cal.

AYRSHIRES—For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

ROYAL JERSEY HERD—Offers young stock from best type and producing strains. R. L. Waltz, Hanford, Cal. References: Farmers & Merchants' National Bank.

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HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FOR SALE Three Holstein cows, one registered and two high grades. Also two high-grade heifers, all well marked. A. S. Mowbray, R. 2, Corning, Cal.

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THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thorough-bred Holstein bulls for sale. Write for prices and pedigrees.

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I NOW HAVE to offer 5 Holstein heifers, sired by a son of King of the Pontiacs and by a grandson. Address J. W. Benoit, Route 2, Modesto, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

CREAM CUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Modesto, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

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Veterinary Queries and Replies

[Answered by Dr. Robert Boyd of San Francisco Veterinary College.]

NOTE.—It is a serious matter to prescribe medicine without knowing all symptoms and conditions. More over, some of our subscribers' questions must be returned to them for more information. By the time the queries are answered, the stock might be dead. Please give full information in your first letter.—Editor.

HOG STAGGERS.

To the Editor: How does a hog act with blind staggers? Cause and remedy?—H. C. W., Bakersfield.

[There is no blind staggers in the hog. In certain forms of indigestion, hogs may lose the power of coordinate locomotion, or even become paralyzed in the hind limbs. A physic is all that is generally necessary. —Editor.]

MARE HAS INDIGESTION.

To the Editor: My 10 year mare has been running at the bowels over a week. She wants to eat all the time. Think she has been overheated sometime.—Sub., Yolo County.

[This is indigestion. Give mare a mild physic of linseed oil 1 pt. and oil of turpentine 2 tablespoonfuls. When the bowels become normal give the following powders: Sodium bicarbonate 3 ozs., powdered nux vomica 2 drams, powdered gentian 1½ oz., powdered anise 2 oz.; mix and divide into six powders and give one twice daily.]

NO OESTRUM.

To the Editor: My cow shows no sign of wanting the bull. She did about three months after calving; but I think she is not with calf. At times she goes down in milk production and becomes rather gaunt.—A. N. J., Patterson.

[Your description of symptoms is rather meagre to form a diagnosis. It would appear from what you say about falling off in milk that she is suffering from indigestion. If this were so she in all probability would not come in oestrum. How do you feed cow? How is her coat? Does she ever grind her teeth? How is her manure?]

WORMS IN HORSES.

To the Editor: Will you kindly advise me of a remedy for worms in horses?—K. M., Elk Grove.

[You do not state kind of worms, whether round, flat, red or white and approximate size. Try the following, however, and if not successful, write again and describe the worms: Tartar emetic 1½ ozs., powdered gentian root 2 ozs., powdered anise 2 ozs. Mix and divide into twelve powders and give one powder twice daily on back of tongue. When all have been given, give the horse the following drench on an empty stomach (after 12 hours fasting at least): raw linseed oil one pint, oil of turpentine and sweet spirits of nitre, 2 ozs. of each. Note the above is a mild physic and the horse must not be exposed to chill or worked (other than slow walking exercise without a load) or given much cold water while it is working.]

GARGET, MILK FEVER, ETC.

To the Editor: Will you kindly tell me what kind of a disease garget is and the cause for a cow getting it? I have a Jersey cow that has had garget for the last three years, just about 10 weeks before she freshens. I rubbed her bag with turpentine and lard twice a day but it doesn't seem to help any. I would also like to know how to prevent a cow from getting milk fever. Some people tell me to give her something to keep her bowels open but do not know what to give her. Also can a cow be milked before calving? My cow gets an immensely big bag before calving and I thought perhaps if I milked her that would prevent her from getting milk fever, or would that injure her?—Old Subscriber, Santa Clara.

[Garget is mammitis or inflammation of the udder. There are various causes. When a cow is attacked give a physic, as one to two pounds of epsom salts with one ounce ground ginger in a quart of warm water and take usual precautions. Bathe the udder in warm water and rub in the following liniment: Fluid extract belladonna leaves, tincture of aconite, soap liniment (U. S. P.) and alcohol, 4 ounces of each, mix. Some cows, especially Jerseys, require to be milked a couple or three times previous to calving. The milk is not, however, considered fit for human consumption. As regards milk fever, try to have cow in rather light condition before calving.] See Oct. 17 issue of Press for milk fever causes.—Editor.

TESTING TUBERCULOSIS.

To the Editor: When testing a cow for tuberculosis is the test complete when the veterinarian relies for his result upon enlargements found near the injection and not upon the temperature?—F. L. H., Yuba City.

[You do not say if method employed was intradermal or subcutaneous. In any case the temperature is a help but not absolutely necessary in the intradermal method.]

HORSE WITH ITCH.

To the Editor: Have a young horse four years old that has suffered from a severe attack of itch, or mange, I suppose. I do not know whether they are the same or not. The disease commenced last April, little lumps rising on the skin and itching terribly. The little lumps contain some pus or moisture of some kind. The disease was worst on the sides of the neck and shoulders and was also bad around the head. A few new lumps appear from time to time, but only a few. The horse has been inoculated twice, and lard, sulphur and kerosene mixed has been rubbed on. The neck, head and shoulders are still bad and he itches badly. I have thought that the horse had a tendency to the heaves, because in very hot weather he breathes heavily and rapidly. He is a very heavy eater. Can you advise me on remedy, etc.?—W. P., Hemet.

[I presume you mean by "inoculated" that the horse has been tested for glanders with negative results. Try the following prescription, use for two weeks and then leave off: liquor arsenicalis (Fowler's Solution of Arsenic) 10 ozs., saccharated iron carbonate 4 ozs., compound tincture of gentian 5 ozs., dilute with water to 20 ozs. Give one wineglassful in feed three times daily. Start with one-half wineglassful twice daily for a couple of days and then increase to full dose.]

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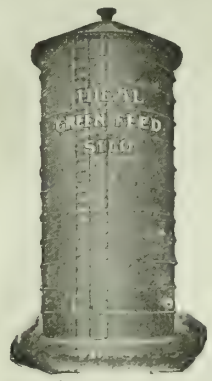

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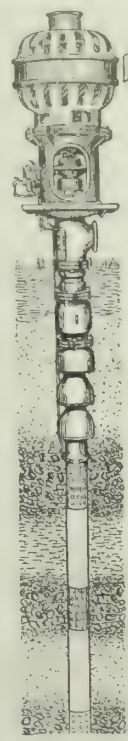

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Topping the Beef Market.

[Written for the PACIFIC RURAL PRESS.]

Each department of farm operation on the Stanford University's ranch at Vina, Tehama county, is carried on in a much larger way than is usual on the present-day California farm, and so it is with their beef cattle, the total returns of which have amounted to $200,000 during the past two years.

The magnitude of their operations is not, however, of so much importance as are their methods, for in securing the above revenue, much has depended upon their topping the San Francisco market for the past two years.

As to how things are done, Manager W. G. Stimmel says, "We don't work by rule and a lot of the things that we do would not be practicable for anyone else to tackle. We just know that when we put a bunch of cattle on a field containing good feed, we are making money. But to figure out how much feed a steer eats in a day or month, well, we just haven't the time, that's all."

Breeding. — There is, however, a reason for having topped the market, for two successive years, or according to Mr. Stimmel two reasons; the stock is highly bred and from the time a calf is dropped till he is put on board the cars he is kept growing.

Highly bred is a much abused term, but in this case it is not a misnomer, as purebred Shorthorn bulls have been used on the ranch for a great many years, and great care is exercised in the purchasing of such animals that they may not be related, and, further, that each one be a good individual.

These bulls are purchased as two-year-olds, being put into the herds about June 1, and taken out September 1. They are used three years, at which time they are usually discarded for breeding purposes.

The cows are bred the first time as two-year-olds, and calving starts the first of March. By October or November the calves are all weaned, and put into small herds, depending upon their size, vigor, etc.

Feeding.—There are 600 head of these young animals, in four separate bunches on the ranch this year. After weaning they were being fed alfalfa hay for a time. This feeding was being accomplished by throwing the hay on the ground. "That isn't according to Hoyle," remarked Mr. Stimmel, "but it's the way we get the least percentage of waste and that's what we're looking for."

Don't get the idea from this that alfalfa hay is used extensively in carrying the beef cattle, for that is not true. We have already said there is no rule of doing things on this place and while some alfalfa hay is fed at different times when no other feed is available, there is no specific time for it.

In the past the stock has been marketed at three years old, but it is Mr. Stimmel's belief that by keeping those young things always growing he will be able to secure sufficient size to warrant marketing at two years old. If so he will have accomplished much good in demonstrating the value of more progressive methods in beef production.

STATE VS. KANGAROO BUTTER.

(Continued from page 417.)

lieves it to be the duty of every dairyman who knows the evil of poor butter, to first produce good cream and then sell to the manufacturer who turns out the best grade of butter. This would at times result in the producer receiving a lower price for his fat, but would ultimately force the poor manufacturer to raise his standards to the desired point for competitive purposes and thus result in good to the entire industry.

On this question, W. H. Roussel of San Francisco believes it to be simply a matter of education and State wide inspection, using the University of California extensively in securing the first named requirement and the State Dairy Bureau through additional inspectors in enforcement of the law.

Admitting that both of these departments should lend their support, the co-operative operators take the stand that the one fundamental reason underlying the success of all dairying in both New Zealand and Australia is the co-operative creamery, examples of which may now be seen in Fresno, Tulare, Visalia, Riverdale, and Holtville.

At these points many of the dairymen have taken the matter of manufacturing into their own hands, and have been foresighted enough to see that the one most interested in quality is the producer, and that he must control the marketing of his product from the milking barn to the consumer. In furtherance of the argument favoring the co-operative or small local creameries, G. E. Frevert of Salt Lake City, who is employed by the U. S. Government, has pointed out that experience in all middle western States has demonstrated that the centralized plant is largely responsible for the present low standards there, and further gave it as his opinion that the same conditions will prevail here with the growth of such companies.

This has resulted from the long distance which cream has had to be shipped and the resultant time intervening between separation and churning. He further made the charge that the centralized concern has no immediate interest in quality, as it is in a large turn over that they expect to realize most from in the way of financial return, and it is this factor which makes them of questionable value to the welfare of the industry.

As will be seen the question is a complex one in many respects, but the fact remains that better butter we must have and whether grading is to be voluntarily done by the creamerymen or taken up through legislative measures, the dairyman, and he alone, is the fellow who is now and will in the future suffer most.

Would it not be well in face of these facts for the producer to take a livelier interest in the matter of improving our dairy standards, whether he take Mr. Green's plan of co-operating with the present day manufacturer or whether he follow New Zealand's and Australia's lead in co-operative making and marketing?

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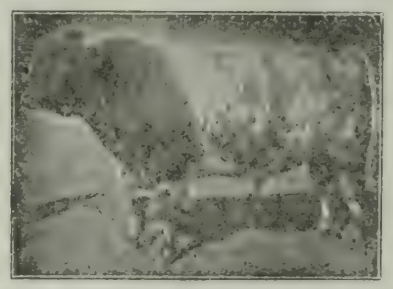

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Below is a list of our Grand Champion bulls for the last eleven years—a list that will stand for quite awhile:

1904—Hillcrest Hero
1905-1906—King Edward (Also Grand Champion World's Fair at Portland.)
1908—King of Greenwood
1909, 1910, 1911—King Lancaster
1912—Greenwood Knight
1913—Greenwood Knight
1914—Greenwood King

All except the first two of the list were bred by us. We have beaten a number of bulls that were bought in the East at prices ranging from $500 to $3000 and brought out here to beat us.

Range raised young bulls for sale, single or carload lots.

Oak Grove Berkshires

Cholera Immune

Our herd is Cholera Immune, the only immune Berkshire herd in the State.

Five herd boars in use and they are second to none on the coast. Our sows are of equal merit.

We have at present some 300 Berkshires and we know that we can supply what you want. Write us or call.

Oak Grove Dairy Farm

H. G. ARMSTRONG, Prop. WOODLAND, CAL.

HOPLAND STOCK FARM BERKSHIRES

Registered

TEN SOWS and SIX BOARS

5½ to 13 months old

of good Berkshire type at reasonable prices

HOPLAND STOCK FARM HOPLAND, CAL.

FOR SALE

By Owner

A Fine Belgian Stallion

6 years old, sound and alright every way. I carried away two prizes with him at the California State Fair this season.

I will sell this horse cheap if sold soon. For further particulars write me or come and see the horse.

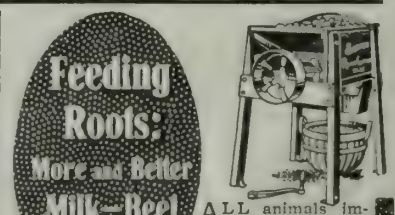
Watson's Feed and Livery Stables

PATTERSON, CAL.

C&S AXLE GREASE

LARGE HANDY BUCKET — SMALL CAN

WHITTIER COBURN CO. S.F. SOLE MFRS.



Feeding Roots: More and Better Milk—Beef Mutton

ALL animals improve in condition and increase their product of flesh, milk, wool, etc., by being fed liberal rations of cut roots. No matter what else you feed, cut roots will improve the ration. They add a zest which means increased consumption of roughage and aid in digestion and assimilation. They put a top-finish on market sheep and lambs. They put color and richness in milk and cream and resulting butter.

Banner Root Cutters

for both hand and power, prepare roots in the best possible way. Cut so fine as to prevent choking of animals. It's done with the "Non-Choke Curve Cut." Made in seven sizes. Write for free illustrated booklet. Every animal condition will be improved by feeding a ration of cut roots.

O. E. Thompson & Sons, Ypsilanti, Mich.
BAKER & HAMILTON, San Francisco, Calif.

Blake, Moffitt & Towne

Dealers in PAPER — 37 FIRST STREET, SAN FRANCISCO
Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Oregon

Testing Concrete Silos.

[Written for the PACIFIC RURAL PRESS

An objection sometimes advanced to the concrete silo, is the probability of its leaking unless the concrete is properly mixed and poured.

In overcoming a condition similar to this with a concrete block silo, T. S. Glide, of Yolo county, used a unique system of both testing the walls for leakage before the silo was filled and later remedying the situation in an economical manner.

As soon as the workmen had completed their work he took a garden hose and turned a fine spray of water onto the wall from the outside. Finding after about half an hour that the moisture gradually crept through the wall, he required the contractor to apply a heavy coat of cement paint mixed with cement and water. The same test was again applied with equally poor showing of the wall till finally after two coats had been applied inside and three outside the wall proved to be waterproof.

Later a coat of pitch was applied to the inside wall. That the water test was an accurate one is shown by the fact that since completion the silo has been filled and emptied twice, and no leaks are yet noticeable in any portion of the wall.

Prevention in this case was worth a lot of cure as it is just possible that unless precautionary methods had been taken a large amount of of the first silage would have been pure waste.

ALFALFA FINISHED LAMBS.

[Written for the PACIFIC RURAL PRESS.]

Cheap hay has caused many an alfalfa grower to look hungrily at all kinds of livestock this season, and it is gratifying to know that the need for more livestock is now considered more than temporary, if our immense areas of irrigated land are to become homes for a prosperous people.

Dairy cattle and hogs are doing their share to overcome this condition but when we see trainload after trainload of spring lambs going into the markets at this time of the year in at best half-finished shape, passing the very barnyards of alfalfa growers who would be glad to realize five dollars a ton for their hay on the ranch, it causes one to wonder whether our range and alfalfa lands should not have some connecting link for the benefit of both the range sheep breeder and the alfalfa grower.

Several large sheepmen of Tehama county have given it as their opinion that a plan of fall and winter feeding of spring lambs on alfalfa ranches would be entirely feasible from their standpoint. Sheep houses at the main markets have also recommended the movement, claiming that they could maintain better prices for a longer time than is now possible as the run at one time would not be so heavy and a better quality of lamb would result.

The man who is seemingly most in need of such a system this year is the alfalfa grower, who has for some reason overlooked this opportunity although it appears certain that he would benefit in no small way.

True, it would probably create a place for commission men in handling and rehandling the stock from range to alfalfa, and then to market, but in many sections it would seem to be well worth the fees thus spent in connecting two widely separated ends of a chain that means much to California.

CARING FOR BLOATED CATTLE.

To the Editor: A good many around here keep their cows up and feed alfalfa hay, seeming to be afraid of bloat. I wish to keep some stock cows, mostly young animals, and it seems to me that it would save a great deal of work to put the stock on pasture and save work cutting and stacking the hay. What would you advise? Is there any sure cure for bloat or any way to prevent it?—F. L. Winton.

(Pasturing cows on green alfalfa is generally considered a poor practice, by progressive dairymen and alfalfa growers, as it not only a source of heavy loss of cows through bloat, but also greatly damages the stand of alfalfa if continually practiced. Then too, there is considerable feed wasted where pasturing is practiced as the cows trample the growing hay in grazing over the field and a large part of it is not eaten for that reason.

The sure cure for bloat is not to pasture on alfalfa, but if it is absolutely necessary that you do pasture in a limited way, it is well to give the cows a good feed of dry hay before turning into the pasture. The dry hay acts as a gas absorbent and also in part satisfies the appetite, thus preventing the ravenous cropping of green alfalfa.

After a cow has gotten down with bloat, the most satisfactory treatment is the use of the trocar, a sharp pointed instrument incased in a sheath which leaves its sharp point free.

In using the trocar, select a spot on the left side, equally distant from the following three points: the hipbone, the last rib, and the ridge of the back-bone. Make an incision three-fourths of an inch long through the skin with a knife. Thrust the sharp point of the trocar, with the sheath on, downward, inward, and slightly forward until the rim is in contact with the skin. Remove the trocar from the sheath, leaving the sheath in the wound. This should tap the gas. Do not remove the sheath until all of the gas has escaped. It is occasionally necessary to keep the sheath in the paunch for several hours, in which case is should be tied in place by passing a cord around the animal's body. When satisfied that all the gas has escaped, remove the sheath.

When the distress of the animal is relieved, give 2 oz. aromatic spirits a ammonia in a quart of cold water every two hours. After bloating has subsided it is well to give a purgative of 1 to 1¼ pounds of Glauber's salts, as constipation usually follows such an attack.—Editor.)

The State Railroad Commission has been asked to reduce express rates on cream and butter from both Visalia and Riverdale to Los Angeles. The Visalia Cooperative Creamery Co. asks that the rate be reduced from $1.47 to 79 cents per case of butter.

A. C. RUBY, Portland, Ore.
242 Washington Street

C. W. BOWERS, Davis, Calif.
One Block north of Bank.

Ruby & Bowers

Breeders, Importers and Exporters.

PERCHERON,

Belgian, Coach Hackneys, Shires and Clydesdales.

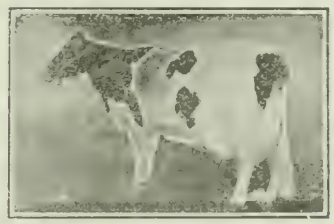
We have on hand at all times the largest and best lot of heavy draft Stallions and Mares, both American bred and imported, to be found any place in the West The reason we sell more horses than all importers combined on the Pacific Coast is that we save our customers from $500 to $1000 on each horse, and sell more genuine horse for the money. We give a 60 per cent guarantee. We give a four-year contract that is good at home. Is that not better than buying from some firm 2000 or 3000 miles away or a transient salesman? We sold 107 head last year. If you are in need of a horse in your locality, let us know.

We expect a large shipment of Horses in the next thirty days.

50 COWS AVERAGE 717 POUNDS BUTTER

This is the average of the 50 cows that have completed yearly semi-official tests to date in our herd, and only 15 at mature age.

Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.



INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as $150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention.

A. W. MORRIS & SONS CORPORATION,

Holstein-Friesian Cattle Woodland, Cal.

SALVADOR STOCK FARM

SHIRE HORSES

Another Victory for the Shires

At the State Fair just closed, the Shire Stallion SEVERN PILOT, imported by the Salvador Stock Farm, won the Stallion Registration Board's trophy and $100 for the best draft stallion of any breed to be shown with three of his get.

If you want to raise draft horses, get a Shire stallion

For Prices, Etc., Address

SALVADOR STOCK FARM
HENRY WHEATLEY

Napa, Calif.

FOR SALE

CATTLE---HORSES---HOGS

Whitehall Estates, Inc.

TRACY, CAL.

REGISTERED HEREFORD BULLS
HIGH GRADE SHORTHORN BULLS
REGISTERED DUROC JERSEY BOARS
REGISTERED BERKSHIRE BOARS
HIGH GRADE PERCHERON MARES
HIGH GRADE PERCHERON COLTS
and FILLIES

INSPECTION INVITED

BULLS! BULLS! BULLS!

I can place in California

100 REGISTERED SHORTHORNS AND 100 REGISTERED HEREFORD BULLS

All of serviceable age for the coming year's use. Miller & Lux, Mayo Newhall and Vanderlynn Stow have had three cars of these bulls shipped to them to be used next spring. Any one in the market can inquire of any of the above mentioned gentlemen regarding their quality and individuality. They are well bred, carry a great amount of natural flesh and are large for their age. These bulls can be kept cheaper here than in the East, as corn is now selling at 75 cents per bushel in Iowa. Buy now and save a large corn bill. Address

W. M. Carruthers, 721 Hearst Bldg., San Francisco

WAUKEEN STOCK FARM

Offers For Sale Some Choice

JERSEY CALVES

From Tested Dams. Inquire of

Modesto Chas. N. Odell California

Poultry for Profit

[Written for the PACIFIC RURAL PRESS by Susan Swaysgood, Pomona.]

Plans for Winter.—As the "good old summer time" has drawn to a close, we ought to be planning for winter. There are some things that are just as well to wait until they come before worrying over, but a real live poultryman or farmer must be forehanded and meet some things at least half way.

One of these things is laying the plans for winter eggs. It is time now to be rounding up the early pullets and seeing that they lack for nothing that will help towards good healthy maturity.

Molting.—I have been talking with several prominent poultrymen who handle hens by the thousands—and they are all getting the pullets in as good shape as possible. One man told me that a good flock of his Leghorn breeders which he would like to keep laying at least a month longer had gone into the molt; and he said "that means they will molt again in winter." This climate is peculiar in regard to molting; and no amount of knowledge can change climatic effects. We just have to study out the best way to handle the birds to prevent two molts a year if possible. Breeds vary a great deal in this respect both with old and young stock. The heavy breeds get a good coat of feathers when they do molt and that seems to settle it for the season, for I have not had any molt twice since coming here two years ago.

It may be that feeding has something to do with the molt, but all the men I have talked with are practical poultrymen who feed a well-balanced ration at all times, so that it does not seem as if the feed would account for it.

Anyway the best thing to do under such circumstances is to coax the hens to eat all the green feed they will, and of more than one kind. This particular poultryman is feeding alfalfa chopped and mixed in the dry mash, and that is good feed; but in a case of this kind when he wants the hens to molt quickly, I would moisten the mash, then feed cabbage or some other variety of green feed between meals, and to mend the ration I would keep a dry mash with flaxseed meal instead of beef scrap for the protein.

Lawn clippings, and lettuce, if it can be had, will make a great difference in the growth of feathers, and that is just what should be the aim, to supply feather-making material. Let the egg question go and feed for feathers alone just for awhile and keep the appetite whetted with variety. A little of each and not too much of any one thing, but all food being rich with the elements needed for feather growth. It can be done but it requires a little care and thought in selecting the right food. Too much flax meal is laxative, so, that tendency must be offset by feeding a little parched wheat every few days—it does not take much—or it can be helped by a little lime-water; and lime is needed in feathers. In fact the more mineral food the hens eat the quicker they will be back on the job.

Pure Breds vs. Mongrels.—In 1906 the West Virginia Experiment Station made a series of experiments that told a story worth remembering, but someway we have short memories: Fifty white Leghorns were compared with fifty mongrels for one year as to cost of food and egg production, just ordinary care and attention being given them such as they would receive on the average farm. In addition to skim milk used to moisten the mash for the Leghorns, they consumed 61 pounds of food costing 85.3 cents, and the mongrels consumed 66.8 pounds of food costing 92.1 cents.

During the year the Leghorns averaged 116.5 eggs worth $2.24 per hen, and the mongrels 96.1 eggs worth $1.78 per hen. The Leghorns gave a profit over the cost of food of $1.39 per head, and the mongrels a profit of 86 cents per head. The Leghorns gained in weight one pound per head more than the mongrels. The highest price for fresh eggs usually prevails during the months of November, December, January and February. During these four months the mongrels laid only 364 eggs and the Leghorns 1,029, or practically three times the number. Surely the mongrels' days are passing, for we can't afford to feed hens that fall behind in both eggs and meat.

Chicken Pox.—Here is what one reader says: "Thank you very much for your kind advice; it helped my chickens immediately (his chickens had roup); but now some of them have chicken pox. What can I do for them?—R. P.

[Wash the sores clean with creolin and water, wipe dry and apply carbolated vaseline, or an ointment made of one part iodoform to 20 parts of plain vaseline. Iodoform ointment will cure all sorts of sores on the head and wattles. The Pacific Rural Press is getting out a book that will answer all these questions and you will have the answer right at home without having to wait. You can't afford not to buy that book; for every time you have to send in a question and wait for an answer you are losing chickens perhaps worth ten times the price of the book. Now that is just plain economy to have an answer to all your vexed questions at hand. It tells you what to do at once and no waiting about it. Make yourself, the publisher and me glad, by sending your order in for a copy of that poultry book.]

POULTRY NOTES.

The Sacramento Poultry Show commences next Monday to run through the week. On its last day the Santa Clara Valley Poultry Association opens to exhibit through the 10th. On November 11, Santa Cruz has a poultry show to last four days and the 12th is the opening date for the San Mateo County Poultry Association's four-day exhibit under the rules of the A. P. A. The local association offers four ribbon prizes for each breed and variety besides specials for the best cock, hen, cockerel, pullet and pen in the show. Twenty-six five-dollar gold prizes are offered for the best displays in

A New Poultry Book.

Particularly Valuable to Farmers and Farmers' Wives.

The publication this week of the new book "California Poultry Practice" by Mrs. Susan Swaysgood of Pomona, is of real importance to poultry raisers of California. In publishing this book the Pacific Rural Press feels that it is doing a good work for the keepers of fowls—especially to those on the farm. The book is fresh from the author, who has spent a lifetime in the poultry game and has made a success of it. In this book she tells how to meet practically every possible contingency of raising and caring for poultry and the handling of eggs. The book is not at all theoretical—it is made up of hard, practical, common-sense ways of doing things in the California poultry yard. It covers conditions over the State, as the author, for years, conducted a poultry ranch at Healdsburg where as a widow she raised her family, and for the past three years has lived in southern California, where she now has a flock of several hundred fine laying hens.

Mrs. Susan Swaysgood.

This is the first attempt by Mrs. Swaysgood in writing a book, but she has for years been a steady contributor to the poultry columns of farm journals. In getting the manuscript into book form Prof. E. J. Wickson was called on to give his aid; and to see that the technique of the business of poultry raising was fully covered, we drafted George H. Croley, the veteran poultryman and supply dealer, than whom there is no better authority on the Coast.

With the above talent interested in its production we feel that "California Poultry Practice" will meet with a large demand from the many thousands interested, and we are very sure that every reader of the book will be well repaid for the time given to its study.

The book contains 160 pages of text and 8 pages of halftone illustrations, is well bound in cloth and will be sent anywhere in the Postal Union at $1 per copy, postpaid. We are now ready to fill your order. Address the Pacific Rural Press office, 525 Market Street.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MAMMOTH BRONZE TURKEYS—Large reductions offered on old stock for short time only. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

ORDER NOW Thoroughbred Bronze Turkeys from largest Turkey Ranch in Stanislaus county. Large Spring gobblers and hens for breeding stock. Address, Crow's Landing Turkey Ranch, Crow's Landing, Cal., Box 227.

RED BOURBON TURKEYS for sale.. First prize winning birds. 3 pairs breeders 1½ and 2 years old and younger stock. Some fine young Toms and pullets. A. E. Balmer, Alhambra Valley, Martinez.

HICKS JUBILEE HATCHERY—36,000 capacity this season. Now booking orders. White Leghorns and Black Minorcas our specialty. Instructions in caring for young chicks free. W. J. Hicks, R. 2, Petaluma, Cal.

OUR SPECIAL White Leghorn Chicks are well hatched and strong, from healthy, vigorous breeding stock. Book your order now for coming season. San Jose Hatchery, 87 Meridian Road, San Jose.

PINE TREE POULTRY FARM, Los Gatos, Cal.—Hatching eggs from S. C. White Leghorns. Selected stock. Ready December 1st. $6 per 100; $50 per 1000. Order now.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 398, Los Gatos, Cal.

WHITE ROCKS—BABY CHICKS. Booking orders now for Fall or Spring delivery. Mrs. J. B. Tupper, Ceres, Cal.

SEND for our Special Poultry Supply Catalogue Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

INCUBATOR CHICKS—White Rocks and White Leghorns. High class stock. Send for booklet of prices Mahajo Farm, Box 597, Sacramento, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, $7.50 per 15; utility, $2 per 15; $10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. G. W. Suits, 378 Bandini Ave., Riverside, Cal.

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

HOPLAND STOCK FARM—Incubator chicks. S. C. White Leghorns and White Plymouth Rocks. Hopland, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

ORPINGTONS—BUFF AND WHITE—Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

FOR SALE—Three months old and up. White Leghorn pullets. At all times. P. O. Box 442, Petaluma, Cal.

FOR SALE—Pure bred Rhode Island Red Cockerels. M. Worley, Palermo, Cal.

BULLFROGS—Investigate the possibilities of breeding the BIG Eastern Bullfrog. Unusual opportunity. AQUALIFE, 16, SEYMOUR, CONN.

the show, besides many cups, medals and merchandise trophies.

At the San Francisco Poultry Show, to be held December 8 to 13, there will be an exhibit of eggs and eggs—every grade of them, and those that won't go into any grade at all. Alfalfa eggs, discolored, misshapen, odd-sized, and highly flavored eggs, and those with the bloom rubbed off, will be displayed in educational array to show the advantages of producing the eggs the market demands. How to produce such eggs and avoid the others as a rule, may be learned by visitors to the show.

The Santa Rosa Poultry Exchange has been paying San Francisco quotations for all the eggs they could get, and shipping direct to customers outside of San Francisco.

The California Branch of A. P. A. is to meet at Petaluma during the show there November 18 to 22. This is the same date as the Willows show.

Mrs. P. H. Richardson of Hughson claims to have raised every turkey hatched. From hatching in the middle of May till September, her 80 birds gained 11 pounds each.

The Tulare Co-operative Poultry Association paid members $2,000 for September eggs at 31½ cents for No. 1's, and 26½ cents for No. 2's. Production decreased but prices increased to make the cash returns about the same as for August.

Antioch has been sending out a carload of celery per day for the past ten days. That section shipped 1200 carloads last year and expects the same this season.

FREE BOOK
Raising Calves without milk. Everything you need for stock and poultry raising. Write today.
F. F. SMITH & CO.,
1006 J St., Sacramento.

MOLTING TIME
is apt to be a time of trouble with your hens.
COULSON'S EGG FOOD
will help to keep them in good condition, saving loss and worry.
A healthy hen will molt quickly.
COULSON COMPANY
PETALUMA, CAL.

BABY CHICKS
Standard Bred.
The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price list and pamphlet free upon request. Now booking orders for Fall and Spring delivery.
THOMAS HATCHERY, Petaluma, Cal., Route C.

Shall We Elect
PHELAN or KNOWLAND

PRESIDENT WILSON

To Represent California
In the
United States

JAMES D. PHELAN

SENATE

WHAT JAMES D. PHELAN SAID OF WOODROW WILSON—

James D. Phelan says that Woodrow Wilson sits in the White House on guard, an ideal public servant, caring for the interests of what he calls the "voiceless body of the people."

From a speech delivered by James D. Phelan at San Rafael, September, 1914.

WHAT THE PRESIDENT SAID OF JAMES D. PHELAN—

President Wilson says: "I was most gratified to hear of the nomination of James D. Phelan for United States Senator. He has been in close touch with the Administration at Washington, and has heartily supported the policies which have been inaugurated for the benefit of the people, policies which, I am pleased to be informed, have met with very general approval."

From a letter written September 11, 1914, by President Wilson.

WHAT JOSEH R. KNOWLAND SAID OF PRESIDENT WILSON—

Knowland charged the President of the United States, Woodrow Wilson, with secretly meeting emissaries of England on holidays and Sundays and implying that a trade with England was consummated which betrayed the best interests of the people of the United States.

Speech of Jos. R. Knowland in House of Representatives, March 28, 1914.

WHAT THE PRESIDENT SAID OF JOSEPH R. KNOWLAND—

President Wilson said that the speech of Knowland was "just the crowning insult of a number of insults which had been introduced in that debate."

Press interview at Washington, March 30, 1914.

Which Man Can Best Serve You in Washington?

The Home Circle

SHE WOULD NOT CAGE THE BIRDS.

By George Birdseye.

She would not cage the birds,
Too great her love for them,—
She loved the rose too well
To pluck tt from its stem.
Flowers were not born to die
Just as their joys begin;
Nor birds to fold their wings
By prison-bars shut in.
She would not cage the birds—
To her it seemed a sin.

She would not cage the birds;
Her deeds but proved her words:
Too tender heart for that!
She would not cage the birds—
She wore them on her hat.
—Our Dumb Animals.

CURE FOR POISON OAK.

In a letter received from A. H. Monroe of Orland, he gives us a formula for the cure of poison oak. We are indeed glad to publish it for our readers. Here is what he says:

"I noticed an article on page 377 of October issue, about poison oak experiences. I have had some very unpleasant experiences with poison oak, so know something about it. I had a drug store at Fairfield, in Solano county in this state, and there is plenty of poison oak there, for it is all over the foot-hills and along the fences.

"There are many remedies, and many reliefs for the trouble, but I only know of one sure cure for it and it is able to give relief and cure the worst cases at once. I will give you the formula that if you like you may publish it and thereby help many that suffer from it.

"R. One fluid drachm Rus Tox, one drop Oleum Tigli. Add enough water to make four ounces. Take one teaspoonful three times a day.

"It will surprise any one who has had poison oak how quick this will relieve and cure poison oak. I sold a great deal of it and never knew of one case where it did not effect a cure, and in most cases there was enough in a four ounce bottle to cure two or three people. Your paper has been of great benefit to me in making a farmer of me and I always advise every newcomer to get and read your paper."

THE FATHER'S DUTY.

A correspondent in the Kansas City Star, in discussing the father's duty in the home, says:

"I've been waiting for some time to take the mothers' defense in reply to an article stating that our prisons were full of boys because mothers did not know how to care for them. Are not the fathers quite as much to blame?

"One father I know never lost an opportunity to tell how he and other boys stole watermelons in the neighbors' patches. Later he had two sons sent to the reform school for breaking in a freight car of watermelons at Sullivan, Ill. Another father had the habit of saying, 'If I was so and so I would kill so and so.' When his son grew to manhood he was sent to the penitentiary for attacking a man with a knife. Another father killed a turkey belonging to a farmer while out hunting with his son and three years later the son was sentenced on a charge of stealing chickens.

"A carefully trained mother I know is doing all in her power to teach the boys that gambling is sin, yet their father will take them to the gambling hall and gamble by the hour. When the mother says, 'Boys, don't go out tonight, but accompany Mary to the young people's meeting,' the father says, 'Let them go.' How often we hear them say, 'Father says that,' when being rebuked by mother for using slang.

"A MOTHER."

CARE OF THE TEETH.

In order to have good, strong teeth, resistant to decay, one must eat hard and coarse foods, says a bulletin on the care of the mouth and teeth, issued to students of the University of Wisconsin. Teeth and gums need exercise as much as any other part of the body. Before the days of fine breakfast foods, meat extracts, finely-bolted flour, and other mastication-saving devices, people were obliged to chew their food very thoroughly before it could be swallowed. This mastication served the twofold purpose of thoroughly grinding the food and also exercising the teeth and gums. The teeth, through exercise, were well formed and strengthened, the gums were hardened, and it was easy to preserve the teeth with very little care. A very usual case of tooth decay is the habit of taking very hot food or drink. The enamel of the teeth expands with the heat, and contracts on cold air being breathed directly afterward, and if this goes on regularly cracks appear, which are followed by the inner structure of the tooth crumbling away. Acids which form in the mouth by decomposition of food are always a source of danger, and their action on the enamel of the teeth must be as far as possible counteracted by brushing the teeth at least night and morning, if it be not possible to do so after every meal. Acids such as vinegar and pickles are more dangerous still, and if they are used persistently will destroy the teeth.

WATER FOR THE COMPLEXION.

A well-known physician says that the girl who has not a clear complexion, and wishes one, has a simple remedy right at hand if she cares to use it. And it is water, applied not outwardly, but inwardly. That is, not so much outwardly as inwardly. This authority says that the sallow girl should drink two quarts of water between rising and retiring, but not a drop at meals. More than this, the water drunk must not be cold. Ice-water does not help the cause of beauty. Cool spring-water, if it is to be had, is better, or at least, water of the temperature of spring water. The drinking of too little water he believes to be the cause of many ills.

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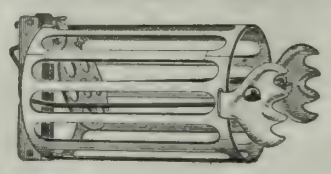
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THE SQUIRREL THAT LOVED MUSIC.

I have just read about a sportsman who one day in the woods sat very still, and began to whistle an air to a red squirrel on a tree. "In a twinkling," says he, "the little fellow sat up, leaned his head to one side, and listened. A moment after he had scrambled down the trunk; and, when within a few yars, he sat up and listened again. Pretty soon he jumped upon the pile of rails on which I was, came within four feet of me, sat up, made an umbrella of his bushy tail, and looked straight at me, his little eyes beaming with pleasure. Then I changed the tune; and, chut! away he skipped! But before long he came back to his seat on the rails; and, as I watched him, it actually seemed as if he were trying to pucker up his mouth to whistle. I changed the tune again. But this time he looked so funny, as he scampered off, that I burst out laughing, and he came back no more. I had much more enjoyment out of this squirrel than if I had shot him."—St. Nicholas.

HOUSEHOLD HINTS.

Polish for Hard or Stained Wood Floors.—Eight ounces beeswax, two quarts of spirits of turpentine, one quart of Venetian turpentine, cut the wax in small pieces, then pour the spirits over it; it will soon dissolve: then bottle. Apply with a soft rag or flannel; it keeps the floors in fine condition.

Japanese Cream.—Four ounces of ammonia, four ounces white castile soap, two ounces of glycerine, two ounces of alcohol and two ounces of ether. Put the soap in one quart of water over the fire; when dissolved add four quarts of water; when cold, add the other ingredients and bottle, cork tight and it will keep indefinitely. It should be made of soft water or rain water. To wash woolens, flannels, etc., take a teacup of the liquor to a pail of lukewarm water and rinse in another water of same temperature, and half a cup of the cream. Iron while damp on the wrong side.

A Good Home-Made Furniture Polish.—Take good vinegar and boiled linseed oil equal parts and add one ounce spirits of turpentine to four ounces of the other two; mix and shake when using.

To Keep Lamps from Exploding.—Boil all lamp burners in bi-carbonate of soda and water for about ten minutes, then polish with a cloth and they will look bright and never explode. This should be done once a month when lamps are in constant use.

Buying a Dog Blanket.

"What's the matter there? Can't you please that lady in a dog blanket?"

"I can please her, all right," answered the clerk, "but she wants the dog to indicate his preference, and he's one of those blase pups that doesn't seem to care for anything.."—Judge.

The White Man's Burden.

She—You used to say that I was all the world to you.

He—Yes, and since we've been married I can appreciate exactly how poor Atlas felt.—New York Sun.

A teacher was explaining to a little girl how the trees developed their foliage in the springtime. "Ah, yes," said the little miss, "I understand: they keep their summer clothes in their trunks!"

The Grocer

The Grocer, who is anxious to please, always carries a good stock of Ghirardelli's Ground Chocolate, because he knows his particular customers demand it. Those who are discriminating in their purchases for the table, always order this famous food-drink. It has become universally used, because of its purity, its unvarying goodness, and its unrivaled high quality. Get a can to-morrow.

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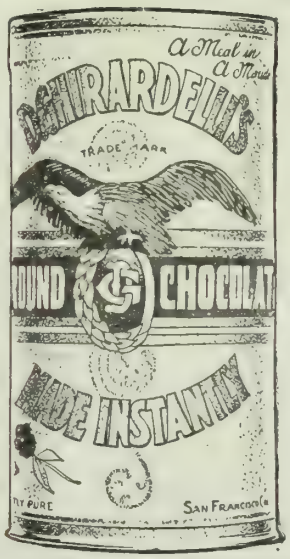

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The Markets.

(Unless otherwise noted, prices quoted are f. o. b. San Francisco.)

San Francisco, October 28, 1914.

WHEAT.

The heavy buying movement has continued through the north Coast district for foreign interests, at prices unusually high for an export basis. Supplies held here are rather light, and the result has been quite a sharp advance locally, with increasing interest on the part of buyers.

Cal. Club, ctl	$1.85 @ 1.87½
Forty-fold	1.85 @ 1.90
Northern Club	1.85 @ 1.87½
Northern Blue'm	2.00 @ 2.10
Northern Red	1.85 @ 2.00

BARLEY.

The speculative market remains quiet, but spot offerings are light at present, and while there is no heavy demand here feed prices are a little higher. Export shipments are going out rapidly.

Brewing & Shipping	$1.15 @ 1.17½
Choice Feed, per ctl	1.10 @ 1.15
Common Feed	**Nominal**

OATS.

Oats are quite strong in the north, with a shortage reported in Canada, but this market shows little feature. Red and white feed are slightly higher this week, but the movement is of only moderate proportions.

Red Feed	1.40 @ 1.45
Seed	**1.65 @ 1.90**
Gray	**Nominal**
White	1.45 @ 1.50
Black Seed	**1.75 @ 2.25**

CORN.

The only change is a slight drop in Egyptian, which is offered freely and finds only a limited demand. Eastern corn is also in good supply, but the price holds up to the former level.

California Yellow	**Nominal**
Eastern Yellow	**$1.80 @ 1.85**
Eastern White	**Nominal**
Egyptian	1.60 @ 1.65
Milo Maize	**1.75 @ 1.80**

RYE.

There is no movement in this line at present, and values remain entirely nominal.

Rye, per ctl	**Nominal**

BEANS.

Bean values appear to have reached a fairly definite basis, as there are few changes to report this week. Bayos and blackeyes are slightly higher and small whites lower. There is quite an active demand at present, especially for early delivery, as threshing in the valley district was delayed by the rains and spot offerings in several lines are limited. The outlook for the more distant future is somewhat problematical, however, owing to the large crop in this state and the adverse financial condition throughout the country. Excessive spot crop supplies of limas held by speculators in the east have been greatly reduced, causing a better feeling in this line.

(On wharf.)

Bayos: Cal. per ctl.	$4.00 @ 4.25
Blackeyes	4.00 @ 4.25
Cranberry Beans	3.65 @ 3.75
Horse Beans	3.00 @ 3.50
Small Whites	3.65 @ 3.90
Large White	3.15 @ 3.25
Limas	5.25 @ 5.30
Pea	4.25 @ 4.50
Pink	3.00 @ 3.10
Red Kidneys	4.25 @ 4.50
Mexican Red	4.25 @ 4.50

SEEDS.

The movement of alfalfa is increasing, and there is considerably more demand all round. Some canary is coming in, but values have not yet been very definitely established.

Alfalfa	17 @ 18c
Crown Mustard, per lb	**Nominal**
Canary	**Nominal**
Hemp	3½ @ 4 c
Millet	2¾ @ 3¼c
Timothy	7½ @ 8 c
Yellow Mustard	**Nominal**

FLOUR.

Local prices stand as before, though there is a rather firmer feeling, owing to the heavy export business in flour and grain, and northern millmen have advanced their prices.

Cal. Family Extras	**$6.60 @ 6.80**
Bakers' Extras	**5.50 @ 6.00**

HAY.

Arrivals are steadily decreasing, which is taken by dealers to mean that supplies in the country have either been marketed or stored for later needs. This condition is causing a little better feeling as to the higher grades, though ordinary stock is too plentiful for any improvement in values. There is still considerable export business for Government account, and some also by private parties, though this movement is not sufficient to give much support to the market. Alfalfa sells slowly here, but there is not much of desirable quality coming in.

No. 1 Wheat, or Wheat and Oats	$8.00 @ 10.00
do No. 2	**6.00 @ 7.50**
Barley	**5.00 @ 7.50**
Tame Oats	**6.00 @ 10.00**
Wild Oats	**5.00 @ 7.00**
Alfalfa	**6.00 @ 9.00**
Stock Hay	**4.50 @ 5.00**
Straw, per bale	**30 @ 45c**

FEEDSTUFFS.

Bran is still coming in freely, and with some accumulation there has been a further decline. Other lines of feed are moving in the usual moderate way, with no change in values.

Alfalfa-Molasses Meal, per ton	**$19.00 @ 20.00**
Alfalfa Meal, per ton	**14.00 @ 15.00**
Bran, per ton	28.00 @ 29.00
Oilcake Meal	**Nominal**
Cocoanut Cake or Meal	**25.00 @ 25.50**
Cracked Corn	**42.00 @ 43.00**
Middlings	**33.00 @ 34.00**
Rolled Barley	**24.00 @ 25.00**
Rolled Oats	**32.00 @ 33.00**
Shorts	**32.00 @ 33.00**

VEGETABLES.

The local garden truck business shows little feature this week. Tomatoes continue to come in freely from both Bay and River districts, and prices remain low, with choice offerings lower than last week. Wax beans are quite plentiful and easy, while limas are stronger. Both lines of green peppers are higher, as offerings are lighter than for a week or so past. Supplies of green corn have diminished considerably, and prices show a material improvement, though the demand is limited. Delta celery is now arriving in considerable quantities, and sells rather slowly at $1 per crate; but the Palo Alto stock is still holding its own.

Green Peppers, bell, lugs	35 @ 40c
Green Peppers, Chili	40 @ 50c
Carrots, per sack	**35 @ 50c**
Tomatoes, lugs	20 @ 40c
Beans: Wax, per lb	1½ @ 3 c
String	2 @ 3c
Lima	3 @ 4 c
Cucumbers, lugs	35 @ 60c
Eggplant, lugs	**25 @ 50c**
Green Corn, sack	1.25 @ 2.00
Summer Squash, box	35 @ 50c
Cream Squash, box	30 @ 40c
Okra, box	30 @ 40c
Celery, doz	15 @ 25c
Do, crate	1.00
Sprouts lb	2 @ 3c

POTATOES AND ONIONS.

River potatoes are still weak, as most of the shipping demand is being taken care of by other markets. Salinas stock is closely held at the old prices. Onions are doing a little better, as digging in the river district was slightly delayed and offerings have been less excessive, though values are still very low. There is some export business.

Potatoes: Salinas, ctl.	$1.40 @ 1.60
River Burbanks, ctl.	60 @ 80c
Sweet Potatoes, ctl.	**1.40 @ 1.50**
Onions: Yellow, sack	40 @ 50c
Garlic, per lb	10 @ 15c

POULTRY.

Offerings are running about the same as before, and with no noticeable improvement in the demand, values remain rather easy. The only quotable change in the chicken line is a decline on fryers. Turkeys are gradualy getting more demand, and desirable birds will bring a slight advance.

Turkeys, lb	19 @ 25 c
Large Broilers	**20 @ 22 c**
Small Broilers, per lb	**20 @ 23 c**
Fryers	18 @ 19 c
Hens, large, per lb	**17 @ 18 c**
Hens, extra, er lb	**17 @ 18 c**
Small Hens, per lb	**15 @ 16 c**
Young Roosters, per lb	**18 @ 20 c**
Squabs, per doz	**2.00 @ 3.00**
Geese, per pair	**2.00 @ 3.00**
Ducks, doz.	**4.50 @ 8.00**

BUTTER.

With shipments from nearby producing points holding up, and little outside shipping demand, values have been gradually easing off, both extras and firsts being now lower than they were two weeks ago.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31½	31½	31½	30½	30	29
Prime	28½	28½	28½	28½	28	28
Firsts	26	26	26	26	26	25½

EGGS.

The movement of prices continues gradually upward, though some features are not altogether favorable. Production is said to be a little larger for the last week in some quarters, but a general curtailment is expected before long. A large shipment of Chinese eggs has just arrived, but the effects of the importations on the local market are hard to trace.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	51	49	50½	51½	51½	52½
Selected Pul	41	40	42½	45	45	45

CHEESE.

Supplies continue rather light in all lines, and flats have gone up rather sharply. Y. A.'s and Monterey cheese being also slightly higher.

Fancy California Flats, pr lb	17 c
New Young American, fancy	16½ c
Monterey Cheese	15½ @ 16½ c

Los Angeles dairy prices:

Butter:	Wed.	Thu	Fri.	Sat.	Mon.	Tu.
Extras	31	31	31	31	31	30
Eggs	45	42	42	42	42	42
Cal Cheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

The apple market continues sluggish, and with large supplies there is a rather easy feeling on all lines. Values, however, are fairly well maintained as formerly quoted. Strawberries are back to comparatively easy figures, while raspberries and huckleberries are higher on lighter offerings, and eastern cranberries stand as before. Winter Nellis pears are in lighter supply and considerably higher. Peaches have disappeared from the market, and few figs are appearing, the limited arrivals of black being readily disposed of. Pomegranates sell at a narrower range, and persimmons are higher. Seedless grapes hold fairly firm, but other lines are lower, with supplies much larger than last week. Cantaloupes and watermelons are easier, as there is no longer any heavy demand.

Cranberries, bbl	$7.00 @ 7.50
Huckleberries, lb	7 @ 9c
Strawberries, chest	3.00 @ 4.00
Raspberries, chest	5.00 @ 7.50
Apples, Newtown Pippin	**50 @ 90c**
Belleflowers	**40 @ 65c**
Spitzenberg	**50 @ 90c**
Gravenstein	**50 @ 1.00**
Pearmain	50 @ 65c
Jonathan	40 @ 75c
Crabapples	**25 @ 50c**
Quinces, box	30 @ 50c
Pears, box:	
Winter Nellis	1.25 @ 1.50
No. 2	50 @ 70c
Other varieties	35 @ 75c
Figs: Black, double layer	**1.25 @ 1.50**
Pomegranates, box	50 @ 1.00
Persimmons, box	75 @ 1.25
Cantaloupes, crate	1.00 @ 1.25
Watermelons, doz	75 @ 1.50
Grapes: Malagas, crate	65 @ 75c
Tokays, crate	45 @ 50c
Seedless, crate	75 @ 1.00
Black	40 @ 65c
Cornichon	50 @ 65c

DRIED FRUITS.

Prices show no further change this week, and the trade in general is in poor shape. There is considerable fruit being shipped out on old orders, but offerings in the country are still large, and local packers see little reason to hope for better conditions. Growers are evidently having difficulty in making sales in the country, as shipments to this market on consignment are large, especially in peaches. It is very difficult to dispose of either peaches or apples at anything like what they should be worth, and a great deal of choice fruit goes begging. Apricots also are slow, but there is not so much pressure to sell in this line. Prunes are not so plentiful, and while they move slowly, large sizes still command a premium. Raisins are moving off steadily at satisfactory prices. The New York Journal of Commerce says:

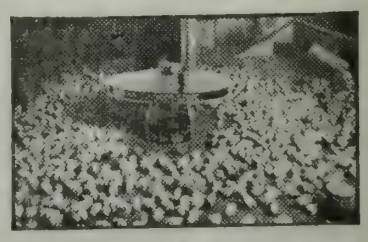
Trade in California products for immediate or forward shipment from the Coast continue to be slack so far at least as demand from Atlantic Coast markets is concerned. The spot market for Prunes is steady, demand being good, while supplies of forties on the spot, the size most wanted, are scarce here, as arrivals have been light. There is some stock on the way, however, near due. Shipments have been restricted by lack of freight room on steamers coming via Panama Canal. In several quarters it is said to be possible to buy 40s to 60s on a 4½c f. o. b. four-size bulk basis for immediate shipment. Most packers, it is understood, are still holding for a quarter to half a cent more than this basis price. Apricots and Peaches get little attention from the distributing trade and the market is easy on both spot and forward shipment goods. Owing to the cutting off of the chief European markets by the war the stock, though, on the home distributers is much greater than can be taken care of. The depression of business in the South as a consequence of the cotton situation is severely felt by packers of peaches who heretofore have found their largest consuming markets in that section. Evaporated Apples are dull, easy and lower.

California Raisins are going quietly into consumption out of spot stocks, but little if any business is being put up from here to the Coast at present. The market is firm under the guarantee of the Associated Company to maintain prices against its own decline.

Evap, Apples, 1914	**4 @ 5 c**
Apricots, 1914	**6 @ 9 c**
Figs: White, 1914	**4 c**
Black	**2½ @ 2¾c**
Calimyrna, 1914	**5 c**
Prunes, 4-size basis, 1914	**4 @ 4½c**
Peaches, new	**3½ @ 4 c**
Pears	**6 @ 8 c**
Raisins (in sweatbox):	
Loose Muscatels	**4 @ 4½c**
Seedless Sultanas	**5 c**

CITRUS FRUITS.

The eastern fruit auctions seem to be strong for oranges, as the prices are in excess of those usually prevailing. Valencia oranges are still being shipped from California in quantity and it is thought that the



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Our 1915 model is now out with splendid improvements and is the finished touch of excellence in the brooding line. Get our new catalogue. It is worth money to you with any system because it tells you many things you should know. It is illustrated and full of detail this season, and every poultryman should have it. It's free to you.

J. E. KERSKY

PETALUMA, CAL.

last of the 500 cars remaining of this year's crop will not be sent out before December 1st. New crop navels from the central part of the State will start east about the middle of November. Manager G. Harold Powell of the Citrus Exchange stated last week that he thought the crop of navels the coming season would be a little less than this, but that the increase of Valencias would even up shipments, and that lemons would show a great increase.

On the eastern auctions, Monday, Oct. 26, Valencias averaged from $2.60 to $4.10 per box and lemons $2.25 to $4.90.

Valencia oranges are offered less freely at San Francisco and a little better tone is noted in the local market, with a further advance in prices. New crop grape fruit is now coming in, and higher prices are being obtained in this line also, while lemons remain as before.

Oranges:	
Valencias, box	$2.25@3.00
Tangerines, crate	75c@1.25
Grapefruit, seedless, box	1.75@3.00
Lemons, box	$2.00@4.50
Lemonettes, box	1.00@2.00
Limes, case,	3.00@5.50

NUTS.

The nut market is in a much less assured position than it semed a month ago. Some of the most desirable lines of both almonds and walnuts have been pretty well cleaned up by the Associations, but there is still considerable stock of some grades left, and there is evidently a large amount scattered in private hands, which is now very hard to dispose of. The consuming demand is not up to normal, and there is every prospect that plenty of European nuts will be available in the east; while Chinese walnuts of better quality than usual, will soon be offered here. The trade is accordingly holding off, and about the best that can be done in IXL almonds is 14 to 15 c., while walnuts are expected to get down to about the level of the Chinese. The New York Journal of Commerce says:

The feeling on new crop Walnuts is unsettled, as demand from Atlantic Coast markets have not come up to expectations. Buyers here are said to be waiting on the foreign markets, which they think may be lower. While Asociated prices are unchanged it is understood that outside packers are disposed to shade quotations. Almonds are quiet and if anything a shade easier on both California and imported.

(Association Prices.)

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
No. 1 Hardshell	Nominal
Budded	20 c
No. 2	12 c

HONEY.

Comb honey is getting harder to sell, as there is a good deal coming on consignment; but there is some demand. It is almost impossible to make sales of extracted here, and there is quite a large accumulation pressing on the market, in view of which prices are largely nominal.

Comb: White	11 @13 c
Amber	7 @10 c
Dark	6 @ 7 c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off grades	3 @ 4 c

BEESWAX.

Good clean stock can be sold at about the old quotations, though the demand is not especially strong.

Light	31 @32½c
Dark	27½@31 c

HOPS.

Buyers are holding off almost entirely at present, and values are nominal at a range of 8 to 10 c., at which a few small sales have lately been made. Buyers, however, are not anxious to pay these figures, looking for further declines. There is said to be no export business, while buying by domestic brewers is suspended pending the election.

1914 crop	8 @10 c

WOOL.

No busines of any consequence is being put through in this vicinity, buyers being still afraid to take hold in view of the uncertain financial and market conditions in the east.

Fall clip	Nominal

LIVE STOCK.

Cattle are unchanged, with the local trade buying in a rather conservative way. Offerings of calves are light, but values show no change. Hogs continue to come in freely, and values have again been marked down a little, while sheep and lambs are higher. Dressed steers and wethers show a further advance.

Steers: No. 1	6¾ @ 7 c
No. 2	6½ @ 6¾c
Cows and Heifers: No. 1	5¾ @ 6 c
No. 2	5¼ @ 5½c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½ @ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
250 to 300 lbs	7¼
125 to 250 lbs	7¾c
Prime Wethers	5½ @ 6 c
Ewes	5 @ 5½c
Milk Lambs	6¾ @ 7¼c

HORSES.

Shipments to this market continue rather light for this time of year, and while they include some good all-purpose horses, there are not many of the kinds most wanted here. It does not appear that the market would readily absorb any really large offerings at present, though the more desirable stock now appearing is disposed of without much difficulty. The reported buying for Europe in other parts of this country has not yet had any effect in this section, but is expected to bring a little more firmness in the market for range horses.

Heavy drafters, 1700 lbs. and over	$225@275
Light Dra's, 1500 to 1650	200@215
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	60@100
Delivery Horses, 1050 to 1250	1.00@ 1.10

MULES

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

DRESSED MEATS

Steers	10¾ @11½c
Heifers	10½ @11 c
Veal, large	13½ @14 c
Small	15 @15½c
Mutton: Wethers	11 @12 c
Ewes	10 @10½c
Suckling Lambs	13 @13½c
Dressed Hogs	13 @14 c

SPECIAL DECIDUOUS MARKET REPORT.

By J. L. Nagle.

Market conditions have remained practically unchanged within the last week, grapes arriving in good condition bringing from $1.20 to $1.40 a crate, while rain damaged fruit has been selling from 65c to 80c. Several of the districts have closed for the season, and, though there will be a few straggling cars of Tokays and Malagas from now on the next two weeks, the offerings will be mostly Cornichons and Emperors.

The trade throughout the country have expressed considerable satisfaction at the condition of the Emperor grapes packed in drums that have already arrived in the east and nearly all cars have sold at from $2.75 to $3.00 a keg delivered.

During the past week, the markets ranged as follows:

New York: Cornichons, 90c to $1.20; Malagas 65c to $1.05; Nellis $2.20 to $3.10; Clairgeaus $1.03 to $2.30; Persimmons 90c to $1.40; Comice $1.67½ to $1.80; Morceau $1.16 to $1.96! Muscats 85c to $1.07; Quinces $1.10.

Chicago: Tokays 75c to $1.30; Cornichons $1.15; Malagas 80c to $1.15.

Boston: Tokays 75c to $1.45; Cornichons 85c to $1.30; Malagas 90c to $1.40; Muscats $1.00 to $1.20; Pomegranates $2.20.

Philadelphia: Tokays 90c to $1.35; Cornichons $1.10 to $1.30; Malagas 90c to $1.10; Nellis 95c to $1.05; Morceaux $1.45.

Total shipments to Oct. 26, 14,758 cars. Total shipments same date 1913, 12,299 cars.

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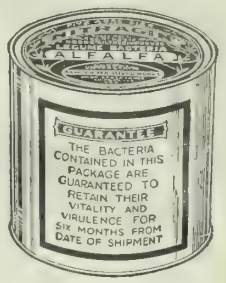

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On our poultry page we print the announcement of our newest book, "California Poultry Practice." This is one of the biggest little books you ever read. As practically every farm raises some poultry, every farmer should have a copy of this book, which was written especially for poultry men and women on the farm. The book contains 160 pages besides illustrations, is handsomely bound in cloth and sells for the modest sum of $1. We want every Rural Press reader to secure a copy of the book as it is one of the series of California agricultural books that we have published or will soon issue.

Our new book "One Thousand Questions in California Agriculture Answered" is still selling rapidly. It is just what you need in your work every day on the farm.

In expressing his appreciation of the **Rural Press**, G. B. Hemphill of San Jose, writes: "I appreciate your efforts to serve and improve a class of people who serve all the people, all the time, and as a member of which I try to and do avail myself of the helpful articles and suggestions to be a better agriculturist and a more efficient servant of the consuming classes!

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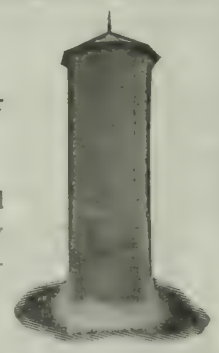

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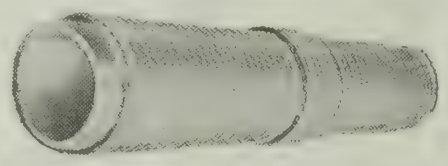

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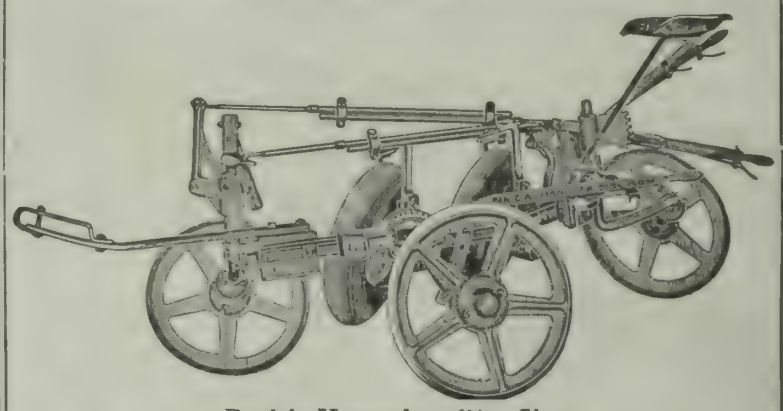

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Vol. LXXXVIII—19 Forty-Fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, November 7, 1914 LOS ANGELES

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Walnuts in a Dry Country.

[Written for the PACIFIC RURAL PRESS.]

Good prices of English walnuts, due to expert market supervision by the California Walnut Growers' Association, and California's unequaled opportunity to select from the innumerable old seedlings, good types suited to every condition, are making that crop a favorite for planting in many parts of the State outside the main walnut section of the southern coast counties.

An instance of walnuts of the French varieties growing well under very adverse conditions, is shown on the 35 acres near Morgan Hill, belonging to Almon Wheeler. They were planted six or seven years ago, mostly on a light gravelly loam twenty-five feet deep underlaid by clay. Only twice since then have there been real wet winters—twice there were very dry winters, but until this season, they had no irrigation. After the first dry winter some of the trees died back. None were pulled out, but as soon as the die-back was evident in March, they were cut back to green wood and made fine growth that year. One tree died back to the ground, and sprouted there, so that it is now a vigorous tree. Five to eight feet growth was made this summer on trees cut back severely in May.

Six-year French Walnut on Wheeler Ranch, Morgan Hill

It used to be thought injurious to prune walnuts, but Mr. Wheeler has found it O. K. if the stubs are covered well with oil paint or hot grafting wax. His pruning is not done in December or January on account of excessive bleeding. In cutting a twig in fall or winter, it is well to leave a couple of inches of the intermode above the top bud remaining. The intermode will die back to the bud, but by that time growth will have started, and after awhile the dead stub will be surrounded and pinched by new growth, which will heal completely over if the dead piece be cut off. When pruning in March or April, the cut may be made close above what will be the top bud. The growth will start soon enough to prevent the die-back from affecting that bud. In pruning, the tendency of the walnut to put most of its growth into the lowest bud, must be kept in mind. In the Morgan Hill section, there is such a strong north wind that Mr. Wheeler was obliged to drive tall stakes beside the trunks to keep them perpendicular. Even then, most of the growth has been on the south side of the trees. So Mr. Wheeler is going to cut off this winter most of what is left on the north side to induce greater wood growth there to balance the south side which will not be cut at all. Those limbs which did not grow much this summer will be topped back to well matured wood this winter so that they will come out to balance the tree next summer. Where the growth is too spindling, the suckers are left as much as eight feet long to take sap and slow down the growth of the top to make it stockier.

Since he doesn't expect a heavy crop till the trees are ten years old, partly on account of the hardships they have endured, his principal object now is thus to form a well-balanced vigorous tree. When full bearing age has come, Mr. Wheeler expects to summer prune to induce the setting of fruit buds.

Most of his trees bore more or less this year, furnishing good means of comparing varieties, of which he has many. Over a year ago he grafted over some which bloomed too early and were nipped by the spring frosts. They were fine big trees and he hated to cut them off; but their strength went into the cions so that they are now bigger than those around them.

The trees are headed higher than fruit trees, probably four or five feet, so that when loaded with nuts the limbs won't bend down so much in the way of horses.

The Concord, though a good nut and though the tree has heavy foliage, to prevent sunburn, blooms too early here where frosts have come as late as April 18. This year the last frost was a light one late in March, and this fall, the first was a light one early in October. Though there was no frost this spring after the nuts formed, the ground was well covered with green nuts under some trees, due to an unknown cause. The Concord shucks easily even while the shucks are quite green.

A bunch of Eurekas were heeled in this spring to await planting, and they began to grow, so they were discarded as being too early for this section.

Several of the extremely large-sized varieties have shown themselves unable to fill up with any larger meats than smaller nuts. The waste of energy in producing excess shells makes these varieties undesirable. San Jose Mayettes and Franquettes seem the best adapted to the conditions like this section. The trees of these varieties have made either good wood growth or very good crops this year—the more nuts on a given tree the less the wood growth. There is not much difference between these varieties in rate of growth. The Mayettes, spreading much wider than the others, have been tied to make the limbs grow more upright by wires stretched between opposite limbs, which are pulled nearly upright. A piece of rubber hose protects each limb where the wire pulls on it.

One of the main difficulties of the walnut trees here is the intercropping. In some large blocks there is a prune tree planted between each two walnuts each direction, and between the prunes and walnuts are two rows of grapes. Since there was no irrigation

(Continued on page 446.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

Address all communications and make checks or money orders payable to
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Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., November 4, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Min'm
Eureka	.64	5.81	4.28	66o	48o
Red Bluff	.10	1.56	2.57	78	50
Sacramento	.54	1.04	1.54	82	50
San Francisco	.16	.47	1.71	74	54
San Jose	.56	.96	1.36	80	44
Fresno	.26	.58	1.02	86	50
Independence	.00	.37	.99	74	40
San Luis Obispo	.16	.18	1.91	90	50
Los Angeles	.12	.31	.86	90	56
San Diego	.31	1.03	.55	86	56

The Week.

The political campaign dies this week and is wrapped in a winding sheet of California's best November sunshine. If a candidate's dream has passed unpainted or a campaign lie untold, it cannot be blamed upon lack of opportunity: there never was an election period with brighter skies or smoother roads, and though the great issues which candidates have invoked may have seemed somewhat spectral and ephemeral because of other real troubles in the world, the various roles have been enacted and the audiences have quietly retired. And now the real business of living begins again, and if we are not mistaken American industry will shoot out from the dumps of depression, cast off its anchorage of wrecked inflations, baseless investments and reek of rapid living, and, like a dirigible from a hangar, take a steady flight toward the delectable mountains of reasonable efforts and durable prosperity. And we feel safe in this prophecy because our new teachers, the bankers, tell us it is coming. Although the leaders of finance of two hemispheres are still at work in Washington with diving bells, hawsers, donkey engines and megaphones, trying to right the financial ship, they are honest enough to tell us that the old, leaky craft is trying to right itself by some forces of gravity which are operating in the public mind. This is their announcement: "Developments in the natural course of trade will possibly present a solution of the whole problem. The rate for foreign exchange in New York has dropped to within a few cents of normal, and individual debtors in this country are evidently seeking to take care of their own obligations in the usual channels of exchange. The declaration of cotton not to be contraband is expected to open a market for the crop. The twelve reserve banks will be open within three weeks, and with the vast reserves to be released, conditions are expected to show decided improvement."

And so our new preceptors, the bankers, become optimists. It is just as it should be: no teacher ever held a pupil otherwise than by the sunshine in his soul.

A Firm Spot in the World.

It surely would be a rotten world if there were no financial foothold anywhere on its slithery crust. If the footfalls of millions in the slush of softening industry on the other hemisphere do not push up the world-stuff so that we feel greater firmness beneath our feet, the doctrine of the incompressibility of the human spirit is a delusion. For everyone can see that if there is to be a firm spot in the world, it must be on our side of it, and if we cannot find it and stand solidly on it, for the good of the world and our own, we shall miss our purpose on the planet. What are some of the facts about it? Well, the air is full of them The value of foodstuffs sold abroad in September was $68,490,889, nearly double that of September a year ago, when the total was $38,786,624. Exports of fresh beef in September amounted to 7,000,000 pounds, eleven times that sent abroad in September, 1913. The 3,000,000 pounds of canned beef exported was eight times the amount sold in September last year, and the meat-packers are said to have European orders now on record to keep them running full time for a year. Telegraphic reports from cities which handle about 72 per cent of the country's export trade showed that from October 5th to 31st inclusive, a trade balance of more than $33,000,000 was established in our favor. If figures from the remaining ports show the same proportions, the October gain over the export balance for September will amount to more than $17,000,000. Such figures could be indefinitely multiplied. But what is the effect on market values? Range cattle, "off the grass," were sold for $157.20 a head on October 27, a record price for the Chicago market. One dealer from Montana sold eighteen choice grass-fed steers, averaging 1572 pounds each, for $10 a hundred, or $157.20 a head. His entire consignment of 736 head of cattle brought $81,000, or an average of $110 a head, and not one of them ever tasted grain. On October 27, also, club wheat sold in Seattle at $1.11 per bushel, or $1 to the farmer, the highest price ever paid on that market for the export trade. The purchasers for the United Kingdom, to whom the wheat will go, were not particular as to the price, but only as to how much wheat could be supplied. The normal export basis is 70 to 80 cents and buyers usually cease operations when the market reaches the top figure. An eastern commentator says there can be no doubt that this year's rise in prices on account of the war will be no less than $1,000,000,000. Does not that inspire everyone who has land and capital, or who can borrow the latter reasonably, to grow something to sell in 1915?

Fancy Products Suggested.

The foregoing comments are of course directed to the increase of staple products—things which the world wants for eating. We are apt, perhaps, to overemphasize such common things, and our readers complain occasionally that we do not encourage them to indulge in production which appeals more strongly to their imaginations. We, of course, do not desire to force everybody into the dull job of getting rich, so we will this time draw a more flossy line. It is suggested by the claim of a California lady, noted last week, that our native birds are becoming more shy in song and taking to silent and sad musings which we have ourselves, as a people, been indulging in too much during the last few months. We certainly should awake from it and get into an industry of more joyful sound. The occasion thrusts itself forward, for canary birds have doubled in price, although the canary is not contraband of war, and Germany is pushing out her product with increased vigor. It is reported that the famous canaries of the Hartz and Andrewsberger mountains are being imported into this country in increased rather than decreased numbers as a result of the big European conflict. Prices have gone up in spite of the increased supply. A canary which formerly sold for a dollar and a half to a dollar seventy-five is now priced at three and four dollars. Rarer birds from the Andrewsberger district, particularly, are still higher priced—around ten dollars each. There is something speculative in it, probably, in anticipation that the next year's German hatching will sing like howitzers and aeroplanes which are now filling the European skies with their raucous notes. It may be just our time to get into the canary business and to produce a bird which will voice our national gladness and thanksgiving. The California canary may be a good cross for the German, for all we know.

"But," some one may say, "why do you encourage us to go into a business which will bring us into conflict with a California constable for having a native song bird in captivity?" We do not know exactly how that will be, but the principle involved was settled by the Bowman act, passed last year, which provides for the establishment of game farms and the selling of venison, pheasant, partridges, quail and other upland game birds and wild ducks—provided they are bred and grown on a regular producing farm. When that is the case it is just as legitimate to sell game birds as it is to sell domestic poultry. The same principle could be easily made to apply to song-breeding establishments, if it does not already include them. Therefore, there is a chance for the California grown canary to relieve the country from its dependence upon melody made in Germany—just as the poor Belgians would rejoice to be relieved at this very moment.

Millions for Belgians.

By the way, we are finding out proper attitude toward the Belgi, which is not to try to steal them for our sakes but to help them for their own. It ought to be some satisfaction to know that a Californian, Mr. Hoover, is chairman of the London commission which has this undertaking in hand and is succeeding admirably. Mr. Rockefeller is going into the work by the million and the whole country is responding actively, all the way from Maine to California. It is hard to speak coolly of the highwaymanship which is even now exact-

ing war indemnities and is trying to blot this quiet and thrifty commonwealth off the world's map. But we do not have to speak of it at all—history will make it warm enough. There are still about seven million people in Belgium, and Mr. Hoover says: "It is not a question of feeding the poor; it is a question of feeding an entire population. The situation affects the wealthy and well-to-do as well as the poor. It touches every home in Belgium. In order to avoid actual starvation, Belgium must have every month a minimum of 60,000 tons of wheat, 15,000 tons of corn, 5,000 tons of peas or beans, and a limited amount of bacon or lard. This will allow rations of ten ounces per capita daily, which is about half the usual soldier's ration. All this will cost $4,000,000 or $5,000,000 monthly. There is no money in Belgium. The whole credit machinery has ceased. Eighty per cent of the people are unemployed."

America will show that, ready as it is for business, it has a warm heart and a generous hand for those who suffer from the most colossal injustice the world has ever seen.

Our Citrus Interest.

The California citrus industry was never greater in confidence and achievement than it now is. The pioneer San Joaquin valley development in this line, that of the Porterville district, counts on an output of 5,000 cars during the harvest which is now under way, and the state crop is expected to be about ten times that volume. This branch of California enterprise still sustains its reputation for turning most quickly and fully to its account the demonstrations of scientific research into its methods and materials. It is announced that every car of oranges shipped from Tulare county this season will bear a certificate setting forth the fact that the fruit meets the requirements of the Federal bureau of chemistry as to maturity. Chemists will be put in the field to make determinations and dealers will be urged to handle only such fruit as bears the maturity certificate. This will demonstrate that the fruit is honestly ripe and cannot be impeached for efforts at artificial coloring. The leadership of Porterville in this form of standardization will be of advantage to the whole early-fruit division of the citrus industry, and will justify the planting enterprises which are now being projected, for it is our honest belief that North America can never have too many good oranges, and we shall also have what is left of Europe to insure the prophecy—if we really do have to deal with a world problem. There is also a better chance than ever that the orange will have a by-product of promise in the beverage it may supply to a whisky-banishing world. Dr. Charles E. Burke of the University department of chemistry has an nounced a process which involves a chemical and mechanical filtration which extracts all solid matter leaving the clear, pure juice, and no alcoholic base is used. Exposed to every test which by incubation, cold storage and sun heat, orange juice, prepared according to Dr. Burke's formula, has retained its original flavor and has been pronounced perfect by horticultural experts. Through the practical application of the new process, it is claimed that pure orange juice could be popularized as an inexpensive beverage, and it can be made more cheaply than grape juice.

Will People Drink Oranges?

The foregoing seems reasonable and attainable, but there is associated with the above sketch of Dr. Burke's process and possibilities another statement from which we must dissent. These words are used in an interview: "It is believed the extraction of the juice and its commercial use will cut down shipment and other charges, which now depend largely upon the useless pulp." This seems to indicate that some one is indulging in a dream that people will be content to abandon the delight of receiving an orange in its fragrant mantle of orange-gold, of unclothing it and of mouthing its delicious pulp. If truly stated, it is a dream which will never be realized. The orange as a fruit to eat will never be displaced by the orange reduced to the form of a beverage. The people will always manifest their preference for the pulp—which is not useless but the real charm of the creation, with the blessing of the sunshine still dwelling in its fragrance and flavor. But the contrast between the fresh pulp and the juice rendered durable is not one fit to be made. The products are distinct, unlike and they complement each other. The more popular the bottled juice becomes the more "shipment and other charges" the consumers of the fresh fruit will pay. The highest claim that can be made for the by-product will be its service in rendering the shipments of fresh fruit better than ever.

Queries and Replies

Querists must give name and address.

Rotating Beans and Grain.

To the Editor: Is it practicable to use beans for crop rotation on grain land in the San Joaquin Valley; planting the beans in spring, raising a crop from them, is possible, plowing the vines under in the fall and subsequently seeding the same land to grain? Can you offer advice or suggestion?—E. W. Milwaukee, Wis.

It is a good proposition theoretically and good practically, if you can get the bean crop. On the plains the pink bean stands the heat better than others and is often very satisfactory. On low, moist land the black-eye bean (cow pea) gives good results. Beans generally dislike the dry heat of the plains, but there are places which suit them well. Most valley beans are grown on riverside lands.

Which Side Up for Vine Cuttings?

To the Editor: I notice your remark that vine cuttings should be planted the same end up as they grow. This tickles me. When I was a boy some Italians had a garden on Cache Creek. Once when they were rooting some grape cuttings I noticed they had them all planted the top end down. I ask them why they planted them the wrong way and they said they grew better. Now I do not believe that and did not, but I found out the reason later on, and it was to get a grape with fewer seeds in it.—C. E. B., Durham.

This is interesting. Grape cuttings are sometimes put in upside down because bringing the butts near the surface causes them to callus more quickly and therefore to be more sure to grow. The formation of callus is favored by heat, which, in the open ground in winter, is near the surface, which is touched by the sun. Therefore, in California and in Italy cuttings are often inverted and buried wholly in the ground, if it is sandy and well drained. After being callused they are planted as they grew and as they are expected to grow. The Italians were right; they do grow better by such treatment, but they usually grow well enough the other way. As for turning the cutting upside down to cause the seed to fall out of the fruit—we have no faith in it.

That Flat-headed Borer.

To the Editor: About six weeks ago, when examining the apple trees planted last March, I found them full of borers—a grub-like worm (of which I send sample) at the ground line. Fully 85 per cent of the apple trees have been killed. I think these trees were infected at the nursery before reaching us. What is your opinion in this matter? Please advise me. Is there any way to prevent an attack of this kind?—Planter, Mojave.

The pest you send is the "flat-headed borer." It has been in California from the beginning of tree planting almost and is always ready to work havoc with fruit trees whenever the sun is allowed to burn the bark. The eggs are laid by a coppery beetle about half an inch in length, which has a keen scent for sunburn fermentation apparently, and the worms eat in and grow very fast with such results as you describe. The preventive is whitewashing the bark as soon as the tree is planted and keeping it white as long as the sun can reach it. Sometimes the bark is burned by heat reflected from light-colored soil. Tree protectors are useful if set down into the ground, or if used with whitewash carried a little below the ground surface. This kind of a borer is not likely to be carried from the nursery although some others are. In planting do not wait for the weather to get hot; let the whitewash wait for it!

Slugs in Clover.

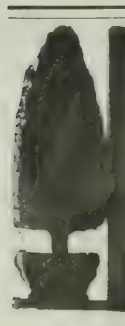
To the Editor: Kindly tell me of an efficient remedy for slugs which seem determined to devour a very fine clover lawn. I used Paris green and hydrate of lime, and that seemed to drive them onto other parts of the garden.—Reader, Sana Clara.

You probably killed what there were. Slugs do not scare and take flight readily. You have been sprinkling your clover too frequently and not using enough water at a time. A good, deep wetting once in ten days or two weeks ought to be enough in the coast climate. This allows the foliage to be dry most of the time and then slugs have no use for it. They are hard drinkers. To fight slugs in flower beds use the same policy: keep the ground surface loose and dry and have the water underneath by watering in large amount and then raking as soon as the soil works well. Too much surface watering keeps a condition suited to slugs.

Rice Hulls for Grape Packing.

To the Editor: Can I pack grapes in rice hulls with equally as good results as with sawdust—Subscriber, Biggs.

It is not safe to undertake it, except experimentally to see what the result may be. Grape packing in sawdust has been demonstrated to succeed after persistent trial, but a specially prepared sawdust is requisite. Sawdust as it runs will not do. This was discussed in detail in our issue of February 21, giving results as set forth by Prof. Stubenrauch, who conducted the business.



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Tools for Grafting Old Trees.

[Written for PACIFIC RURAL PRESS.]

Already we are being requested to supply names of fruit tree grafters to growers who are dissatisfied with their present varieties. Since grafters were especially scarce among the farmers last year and probably will be so again through the season now about to start, perhaps our querists themselves had better learn to do the job.

We shall, in another issue, describe the operation as done by the writer last winter in Placer county on peaches, plums and pears. Apples, walnuts and probably other fruits would topwork in the same way, but special methods are required with oranges, olives, figs, etc.

Tools required are: A crescent shaped pruning saw. This should not have a regular curve, but ought to be nearly straight two-thirds of its length and then only slightly more curved the last six inches toward the tip. We used one with the regular curve for a while and found that the end of the cutting stroke was always lost by the end of the saw biting too hard and the last few teeth usually spoiled some good bark. Always keep this saw well sharpened and well set. If you have no tools for sharpening, at least set it if you must do so with a hammer and nail. This is written out of the memory of anguished, sweatful, aching arm strains, due to the saw teeth wearing down on the outside edges. A broad-bladed jackknife always kept entirely free of nicks. This is to cut the cions with. The broad blade is necessary because with a narrow blade the cut is almost invariably a curve which prevents the fitting of the cion snugly into the notch in the stub. Any nick in the blade will shove the wood fibers before it and compress little ridges on the cion which, according to H. Reinecke, of Placer county, swell up more when the sap comes, than the rest of the cion, and force the cambiums apart. A small sized harness knife of fine steel and almost razor edge to trim the notches, as will be described later. This knife is somewhat crescent-shaped with a handle like that on a case-knife, placed perpendicularly to the center of the concave side of the crescent. A pair of pruning shears to cut the cions, a little wooden mallet to drive them tightly into their notches, with a box to carry them in, and a wax brush and melting pot, complete the outfit. The box is about 6x15 inches with sides about three inches high and the ends sloped from the upper edges of the sides up to a height of about eight inches at the center. A broom handle endwise between the upper points of the ends, serves to carry the box. A separate space is made in the box for the harness knife so it cannot be dulled by contact with metal. A notch is sawed on the sloping side of one end to receive the blade of the saw so its teeth cannot be harmed by contact with the pruning shears. The box also holds the cions.

Wax Heater.—To keep the wax hot we used a little kerosene lamp stove set into a round can just big enough to fit it and high enough to support the wax pot just above it. A hole cut into the side of the can opposite the turn-screw of the stove allows adjustments which will be found necessary. A piece of heavy wire makes a good handle. This melting outfit was not very satisfactory in windy weather, when it smoked and prevented the wax from heating. Perhaps some of our readers know of wind-proof wax melters. A perfect wax brush will be described elsewhere.

Permanent Grafting Brush.—The bristles of the first grafting-wax brush we ever used, all pulled out the first half-day. Possibly it was because we tried to spread the wax when it was too cold and sticky. Anyhow, a brush that leaves hairs in the wax is unnecessary, for we used one last winter devised and made by Howard Snelling of Penryn, which didn't and couldn't lose the hairs. When they are burnt off by carelessly leaving the brush in the hot wax while working on the trees, a new one could be made in a few minutes on the farm. It is thus described for us by H. E. Butler, of the Penryn Fruit Co., on whose ranches it was and will be used.

"Take a piece of iron pipe one-half inch outside diameter about 8 inches long; a bunch of horsetail hair about 8 inches long and as large around as your little finger; loop an eighteen-inch piece of good baling wire over the middle of the hair, run the ends of the wire through the pipe; with a pair of nippers pull and twist on the wire ends till the hair comes up into the pipe about an inch. If the end of the pipe is flared a little the hair starts easier. It will be wedged in very tight and doubled so that the ends of the hair stand out like a brush three inches long. Bend the wires over the top end of the pipe to hold them fast; twist a wire around the hair close to the pipe end; wrap the hand-end with cloth or tape; cut off the hair to the right length (about 2½ inches) and you have a brush that won't melt in hot wax or pull out in sticky wax."

TOP-WORKING MANGOS.

To the Editor: Can avocados be top-worked on mango trees to save time in bringing fruit?—J. W. K., Rocario, Mex.

(Answered by F. O. Popenoe, Altaden

[It is not possible to top work a mango grove to avocados. If his mangos are inferior sorts and not worth growing, he could cut them back heavily, allowing new shoots to grow, and then bud these new shoots to better varieties of the mango. Doubtless the U. S. Department of Agriculture, Washington, would furnish him with budwood of some of the best varieties for that purpose.]

How can I dispose of olives next year? Talk up a local association now while your troubles are vivid, and put up your own pickling plant. Talk for a state organization of olive growers.

Attack the bugs and fungus diseases before they multiply.

Pruning is good for tree roots as well as tops.

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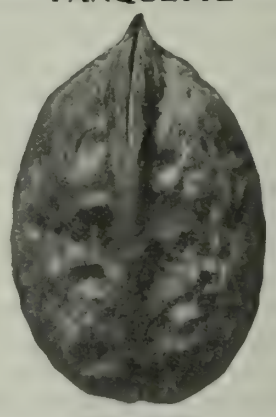

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Sources of Potash.

[Written for the PACIFIC RURAL PRESS. By J. E. Adamson, Pomona.]

Potash is important in horticulture as the refining element in the production of fruit. It makes the fruit sweeter and the skin smoother, but if used in large quantities is supposed to have the property of causing damage through the hardening of the tissue of the wood, sometimes called mineralization.

It has the credit also for being the crop producer, some even thinking that its effects are immediate, and that potash put into the ground as late as April will prevent the excessive June drop of the small oranges. Claims of this character should be looked upon with some measure of doubt, as trees are not given to lightning change, and the best methods will be found to be those which tend to keep the tree supplied with all the elements of plant food.

Potash as we generally buy it is in the form of sulfate of potash, or potassium-sulfate, the real article being the metal potassium, in which form it would not be available to the use of trees.

The principal source of this mineral salt is Germany, though some is found in the United States and some in other countries.

Fertilization is only one of its uses, as it enters largely into the business of the manufacturing chemist; but fertilization is one of the big uses to which it is put, the German farmers using more than any three nations for this purpose.

Potash can also be purchased in the form of muriate, but this is not so good a form as the sulfate, for the reason that there is some chlorine present which may do harm under some conditions.

There is a vast supply of potash in the rocks whose decomposition gives us our soil. Plants and trees take it up from the soil and when burned leave ashes in which is left the deposit of potash. This ability to take from the soil the needed potash is common to all woody trees and plants. When we take away from the trees a crop of fruit, we carry away a considerable portion of the accumulated potash and other minerals, and in the case of continued heavy crop removal, we may take from the orchard, potash and other plant foods faster than it can be taken out of the soil. When this is the case we must either replace it with potash from some outside source, or force the rocks which are in the soil to give up their store of the mineral at a rate equal to the demands of the trees.

All the waste products of the orchard and home should be given to the soil. Prunings should either be cut up and plowed into the soil or burned and the ashes left on the place. The burning gives back all the potash and most of the phosphorus, but the nitrogen is gone.

Too often, however, the brush is hauled off the place to some vacant land to be burned, and the ashes are left there to do no good to that place or the one the brush came from. The practice of cutting up is not more expensive than the burning method, and gives back all that can be had from the ashes, besides the nitrogen in the brush, and the mechanical effect on the soil due to the humus formation in its decomposition.

Danger of damage from the use of potash would seem to be largely in the nature of imagination, as it is questionable whether any one will buy enough seriously to hurt the trees. I once had five pounds per tree applied by mistake, and found neither damage nor benefit, there being no noticeable difference in yield or quality of fruit in the part of the grove where the mistake was made.

It would seem that when soil is in condition to give up the plant food that is in it, the addition of more of the same element will not make much difference in the output of the tree. If there is a shortage of any element, however, there will be quick response. The moral of this is that good fertilization methods are those which keep the plant foods in the soil up to the point where the tree can take the nicely balanced proportions of each to fit its needs, both as to yield and the physical condition of the tree.

We have seen trees forced to excessive bearing by the unbalancing of the fertilizer, and made to be the envy of the neighborhood, and have seen the same trees go down in condition until they would not pay expenses, and would give no response to the ordinary methods.

Such trees can be healed if taken in time and treated by Nature's methods, but if the cure is too long delayed they become mineralized like a person who has too much lime in his bones, and his arteries hardened.

If your soil lacks potash as will be shown by the roughness of skin and excess of acid in the fruit of citrus trees, buy some, and apply it at the time of year that best suits your fancy. If there is potash in the soil and the trees do not get it, set some of Nature's workers to dig it out for you. Lime is one of these, its principal effect in fertilization being the active decomposition of vegetable matter, and the setting free of the alkalies that are combined in the soil and furnishing them to the roots of plants. Potash taken from the soil by the action of growing plants, is returned in available form when the plants decompose. Just as much is returned as if you had burned the plant and scattered the ashes on the soil. Added value will be gained in decomposition by the formation of nitric acid and humus.

None of the four elements we have mentioned in these papers are to be considered as a cure-all. A balanced ration is as important in horticulture as in stock feeding. An excess of nitrogen will give a super-abundance of wood growth and is supposed to produce sour rough fruit, while too much potash is liable to give a tendency to small sizes of sweet fruit. An excess of the phosphates seems to do no harm except that the money contained in it will be laid away where no return can be had unless we have the key to unlock the treasure house.

An excess of lime would not seem to do harm, but a shortage will result in inefficiency in the use of the other elements of the plant food in the soil.

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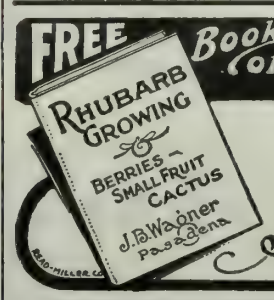

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Prunes on Peach Trees.

To the Editor: I note your article on page 399, "Against Top Working." I planted "Phillips Clings" in February, 1912, which have proved to be freestones. The trees are sound and healthy. I want to top work them to French prunes. Would it be better to graft or bud them?—J. B., Live Oak.

[We were giving expression to the views of some of our friends in the article mentioned, but we think that they would scarcely be against top-working young, sound trees of undesirable varieties. Leonard Coates of Morgan Hill has the following to say on this subject:

To the Editor: Under the heading, "Against Top Working," was a brief article in Rural Press of October 24. Apparently the growers quoted referred to the grafting of old trees, which, especially with the stone fruits, is not often a great success. The caption is ambiguous, however, if not misleading. "Top-working" might also mean budding, and this is the only practical method in such cases as are cited. Simply cut off, or prune back the trees to be worked over, sufficiently to cause the next spring a vigorous growth of suckers in the trunk and main branches. Thin out the suckers, leaving a goodly number where they will be needed, and bud them as early in June as mature buds can be obtained. These buds will make a growth of several feet the same summer. The remaining tops can be cut down, with a properly sloping cut, close to a budded sucker, and painted or waxed over, also in the proper way.

If the trunks of the peach trees referred to by one grower were healthy to begin with, and by shading as soon as tops are cut, even "top working" of prunes on old peach trees is perfectly and permanently sucessful, provided above directions are followed.

I often wonder why it is that otherwise practical growers balk at budding as if it belonged to the domain of wizardry.]

IRRIGATION AND DRAINAGE.

Suits aggregating almost a million and a quarter dollars have been started against the Sacramento and San Joaquin drainage districts. It is claimed that the lands were taken over by the district as rights of way for the Yolo by-pass, and that as yet the owners have not received any payments.

The vast tule basins from near Nicolaus to Sacramento will, it is claimed, be so protected from water by huge levees this year that farming will be entirely practicable. Instead of furnishing feed for a few months during the summer, this land will be brought under cultivation, the Natomas Consolidated, who own a large part of this reclaimed land, having already leased 25,000 acres, which will be planted largely to beans. This will add a great deal of good land to the Sacramento valley's already large area.

With the purpose in view of enlarging the irrigation district in which they operate, the directors of the Hallwood Irrigation Company of Yuba county, last year held a meeting for the purpose of increasing the capital stock of the company.

In a statement issued at Merced, A. R. Kanaga, president of the American Irrigation Association, stated that it is his belief that the proposed irrigation district in Merced county should include the Crocker-Huffman Company's plant. If such a district were formed he believes that the entire county would be greatly benefited.

WALNUTS IN DRY COUNTRY.

(Continued from page 441.)

on the place till the past summer, the intercrops took so much moisture that there seemed none left, and it is a wonder that the walnuts grew at all.

Mr. Wheeler's experience without irrigation and with it, convinces him that commercial walnut growers must have water ready for use through the summer, and that far better growth would be obtained from young trees. Though he himself has a well for irrigation there is, even now, much talk of forming the Southern Santa Clara valley into an irrigation district to get water from the hills. Under irrigation, what looks like a pretty dry country now would bloom as the San Jose district.

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Frost Fighting Equipment.

[By John J. Fox, Napa County Horticultural Commissioner.]

The frosts of March are the ones most dangerous to us in Napa Valley, so far as deciduous fruits are concerned, but it would not do to put off our preparations until the need arises. It is necessary to have all storage tanks established and the heavy hauling of the oil finished before the wet weather sets in and the roads become heavy.

On account of the expense, we shall consider only three makes of orchard heaters. They are as follows:

The Canco pot is a three gallon heater, burns eight hours and costs 50 cents a pot. It is said to be very satisfactory.

The Bolton heater—the size we need—contains two gallons, burns about 12 hours, and costs, retail, $25 per 100.

The Hamilton orchard heaters hold 1, 2, 3 and 6 gallons each. The two-gallon size costs $22.50 per 100 and burns about 10 hours. Like the Bolton, it is a round pot and the pots nest for storage. It is a handy size in that it contains enough oil for our longest frost and in case it is needful to move it when plowing, it is no great weight to lift over. These heaters are furnished with covers to keep out the rain and with care should last for many years.

The only thing the orange men have to say against the round pot is that it is sooty. This does not affect us as we have no oranges to wash and the smoke serves a good purpose as a blanket to keep the heat down where it belongs.

The cost of stove distillate is $1.15 a barrel at Napa in carload haul out through the orchard in wet lots and the cost of crude oil is the same. Distillate burns about the same as crude oil, but is better to use than the crude oil as the latter generally contains a little water and this causes the pots to boil over and spill oil on the ground—a serious objection at a grave crisis. Star fuel oil costs 2½ cents per gallon and has more heat units.

About 300 gallons of oil is recommended to keep in store per acre, and not less than 200 gallons. About 200 gallons at a time is enough to weather for filling the pots—weight, with tank, about one ton. This will go on the orchard truck and with a 2-inch faucet is readily emptied into the pots. It takes one man to five acres to light the pots and then they need attention throughout the night, to see that they do not soot up and go out. Torches are made at the hardware stores, or can be made of twisted wire with a bunch of asbestos fiber, dipped in oil. All "round" pots produce about the same results, the only difference being in fuel capacity. Where two-gallon pots are used, 100 to the acre is enough to deal with 10 degrees of frost. Fires must not be extinguished until the temperature outside the orchard has risen to at least 30 degrees F.

Effect of Smoke.—The smoke does not hurt the trees or fruit. Soot on foliage or bloom causes no damage. Smoke contains practically no heat but serves to blanket and hold the heat that comes from the burners. An orchard without foliage requires much more heat than one that is out in leaf. Here in Napa we consider the danger point, under the worst conditions, at 31 degrees F. If there has been no rain perhaps 30 degrees would be safe.

Storage.—The building of cement cisterns should be left to the cement builder who knows just how to build a tight wall. It should be thick enough to stand all strains and the walls should be coated with hot coal tar or asphaltum. This should be put on thick to resist the oil.

Cost.—Orchard tank with faucet (110) gals. about.....$10.00
Storage tank with 2-in. faucet, capacity 1500 gals. with top and manhole 55.00
Same with capacity of 2000 gallons 65.00
5-gal. carrier pails..... 1.50
One gallon squirt cans, each.. 2.00
Pipe torches, each 2.00
Automatic frost alarm 22.50
Registered thermometers, each 5.00

Average cost of equipment first year, including storage tank, 300 gallons per acre, oil, fire pots, etc., on 5 acres .....$50.00 per acre

Thereafter, for three frosts in a season..... $12.00 per acre.

If no dangerous frost takes place then the oil will keep over perfectly well for another year.

Use at least three thermometers and place them three feet above ground in different parts of the orchard, clear of everything. Use at least two registered instruments. It is also good to have one self-registering thermometer, or one standard minimum and two ordinary thermometers well tested.

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Our parent trees of FRENCH, IMPERIAL, SUGAR, and ROBE DE SARGENT have been carefully selected from trees having the best record for PRODUCTIVENESS, QUALITY, AND SIZE OF FRUIT. ON BITTER ALMOND, PEACH, and MYROBOLAN ROOT. Order your trees from us NOW, and be sure of getting the best.

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THIS IS YOUR OPPORTUNITY to own a farm newly and completely equipped.

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Work under the direction of a Farm Adviser to avoid errors. Services free.

This offer should demand the investigation of anyone desiring to start farming, or wishing to move into a new district, where there will be a big future. Your money cannot be placed in a safer way than in new land being improved.

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Utilize every acre and have no waste.

The Price is
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40 ACRES good level land—San Joaquin loam—in the Sacramento Valley near the foothills, in the true thermal belt.

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This equipment is the best obtainable, produced by well-known manufacturers. The trees and seed will be furnished by the best known firms on the Pacific Coast.

Watch for Their Names, Each One Stands for Quality.

Send this paper to any friend who you think may be interested in such an opportunity. We will send a three months' subscription to the Pacific Rural Press without charge, to anyone in the East who is interested in owning a California farm.

Write for further particulars of this inviting opportunity to establish yourself on a profitable and fully equipped farm.

Dudley Moulton

1202-1204 First National Bank Building, San Francisco

Russian Thistles in Kern County

[Written for the PACIFIC RURAL PRESS by K. S. Knowlton, Kern County.]

This campaign was begun in the interest of the agricultural people of this county, and is being carried out as an educational and co-operative campaign rather than one forced upon the people by what is usually termed "job hunters." By getting the co-operation and good will of all the people, a campaign such as this is an easy matter.

This county being naturally divided into districts by mountains and other undeveloped districts, which act as a barrier to the spread of weed seed, so it was possible to divide the county into districts, and in each of these districts an inspector was appointed who made a thorough canvass of his district, not only notifying the farmers to clean up this weed pest, but at all times explaining its evil effects—what it has done in other countries, and the history of the weed in the United States.

Methods of control have been various. Many people have begun by planting cultivated crops, in which the control is very easily carried out. Others have summer fallowed. In all cultivated fields such as orchards and corn fields the control of this weed is easily carried out by the regular cultivations. The largest problem is in the tracts devoted to grain farming, which are not under irrigation. Here many experiments have been carried out. An oil burner was devised which was run over the ground burning all weeds clear to the ground. This did not prove a success, due to the mechanical defects of the machine. Others run a weed cutter over the ground after the grain is harvested, but this would have to be repeated several times in one season to keep down new growth of thistle.

At present most of these large tracts are kept clean by immediate cultivation after the grain is harvested, some times following up by a weed cutter later in the season. If the weed is not too fully matured after the grain is cut, it may be successfully controlled by close pasturing with sheep.

In the beginning of this campaign a large amount of the work was done to rid the land of the weeds for that season only, for people were under the impression that this campaign would be as a campaign carried on against the ground squirrel, to continue for one year only, and then only the resident farmers required to work against them; but as it is being continued, the people are now working to rid the land permanently of the weeds.

There have been only a few instances where it was necessary for this office to clean the weeds on any property, and now these people are co-operating with us. The supervisors have co-operated in a financial way, as well as clearing all county roads of the thistle.

In this weed campaign we have directed our attention against the Russian Thistle, the Bur Grass (Cinchrus Carolinianus) and the Puncture Weed (Tribulus Terrestris) the latter of which has been spreading quite rapidly in some of the alfalfa districts, and is a terrible menace to this crop.

CURRANT PRUNING.

M. S. Goulart of Alameda county was seen pruning his six-acre currant patch in September—so early because, as he said, "might as well, while I have time and the weather is good. I can take my own time." The latter point is of importance since Mr. Goulart has seen upwards of 50 years.

He prunes every year, cutting off all but about four inches of new wood and thinning out the brush all through to get sunlight to the inside. This is permissible in the Alameda district because the sun does not often get so hot as to sunburn canes or currants that have a reasonable amount of foliage. Weak canes, and those afflicted by borers, are cut out at once to give the strength to the rest.

Thinning of the brush is done to induce larger size in the berries, for the largest berries sell best. From this six acres, on which the bushes are now just six years old, Mr. Goulart sold last summer over 22 chests at $6 per chest. He hopes to have 100 chests next year and more every season till they are about 12 years old if he prunes right.

MOVING YEARLING PEACH TREES.

To the Editor: Should I transplant peach trees next spring that were planted last spring, or should I get new ones?—F. L. H., Yuba City.

[Why should you move them? If they are healthy, and the land where they now are must be cleared, better cut off about two-thirds of the tops and move them this winter. They will endure the transplanting alright. But if they have been stunted by dryness or disease or injury, new trees would be more profitable.—Editor.]

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FRANQUETTE — TRUE VROOMAN STRAIN. Late Bloomer. Second only to the Wiltz Mayette Walnut for Northern and Central California.

Our scions of Wiltz Mayette and Franquette are cut by R. Wiltz, pioneer walnut grower, and are not only absolutely true as to strain, but are cut from finest, selected parent trees.

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PHILLIPS—Preferred by canners to any other late variety—small but meaty—clear yellow to the pit. We cut our buds from a block of trees that are an exceptionally good strain of this variety.

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THEODORE PAYNE
345 S. Main St. Los Angeles

USING WATER MORE IMPORTANT THAN GETTING IT.

Professor Samuel Fortier, who has charge of the Irrigation Investigations of the United States Department of Agriculture, read the following brief but important statement at the 21st meeting of the International Irrigation Congress in Calgary, Alberta.

It may interest some of you to learn that the irrigation investigations of this Department, so ably conducted for years by my predecessor, Dr. Elwood Mead, are being continued over a broader field and under larger appropriations from the Congress of the United States. We do not aspire to anything so ambitious as the building of large structures for the retention and conveyance of water for irrigation. Our humbler task is to help those who are making good use of the water for the purpose of increasing the productivity of arid and semi-arid lands.

In their desire to build irrigation works, which may be said to have become epidemic in this country during the decade from 1902 to 1912, promoters as well as statesmen overlooked the important part performed by the settlers under such systems. It was not until large areas had been included in irrigation projects and vast sums had been expended on the construction of works to provide water supplies that men began to realize that there could be no revenue from such investments without an adequate number of reasonably prosperous settlers.

Some indication of the actual condition of affairs was disclosed by the Census of 1910 which showed that approximately 15 million acres were irrigated in 1910, that 5 million acres more were ready for irrigation, and that an additional area of 12 million acres was included in partially completed projects. The total cost of works to irrigate this total area of 32 million acres was estimated at $424,000.000.

Large as this amount may appear to be, it forms less than one-half of the total cost of irrigation. According to estimates made by members of this force, the expenditures incurred by the settlers in removing worthless desert growth, grading the surface of the land, building the necessary ditches and structures and otherwise preparing their farms for profitable returns varies from $9 to $19 per acre in the various western States. By applying these unit-costs to 32 million acres, the area included in completed and partially completed projects, an aggregate cost of $443,000,000 is indicated, of which less than one-half was expended in 1910.

It is thus manifest that much of the capital which has been invested in irrigation works in the past dozen or so years is not well secured so long as from 12 million to 17 million acres of the lands which have been provided with water remain unoccupied and unused for lack of the right kind of settlers.

It is also manifest that the settlers who may be induced in time to establish homes on this vast area can not, without substantial assistance and the privilege of long term payments, put their farms on a paying basis and at the same time meet the cost of the water and land.

Morse's Catalogue

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The fertilizer to buy is the kind that wears—the kind that puts life into the soil permanently—the kind that releases the germs of fertility and renews the producing qualities—the kind that makes the soil "come back" and stay back.

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1000 lbs. per acre once in each four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500%. At Maryland Ex. Station $1.96½ gave $22.11—over 1000%. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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Agricultural Review

DECIDUOUS FRUITS AND NUTS.

A total of 305 tons of almonds have been harvested in the Capay valley this year, of which 165 tons were handled through Esparto and 140 tons through Guinda. At 15 cents a pound, the total amount of money received for the crop will be approximately $100,000.

It is estimated that 570 tons of walnuts have ben harvested in Santa Barbara this year, of which about 30 tons are culls. Of this amount all but two carloads have already been shipped at prices established by the association. Harvesting was finished almost two months earlier this year than last.

The first of a series of growers' meetings scheduled for various places in Sonoma county was held at Sebastopol last week, at which time George P. Weldon, Deputy State Horticultural Commissioner, talked on pruning apple trees. A large number of interesting subjects to the farmer will be taken up in future meetings at Petaluma, Sonoma, Healdsburg and Santa Rosa.

A plan is being proposed at Selma for the organization of an association whose duties it will be to secure the passage of laws enabling peach-growers to form into districts in much the same manner that irrigation districts are now organized. The plan is to so legislate that the majority of the growers in each district would be enabled to pass laws relative to prices and other important factors. A national advertising campaign is also talked of for the purpose of stimulating the demand for dried peaches.

The first carload of apples from Tuolumne county this season arrived in Stockton last week, among those received being the following varieties: Winesaps, Delicious, Stamen Winesaps, Jonathans, Missouri Pippins, and Baldwins. Apples from that section have a particularly fine color and flavor, and with the recent activity in that county along apple-growing lines it is a safe prediction that the Tuolumne apple will establish a high reputation on markets desirous of high-class red apples.

What is said to be the only Chinese nut (or leiche) tree ever found in bearing in the United States has been found by government representatives, including C. W. Beers, at Santa Barbara. Mr. Beers states that "it may mean that the tree can be made to produce crops of nuts, and be introduced extensively over the United States." The party also made a tour of inspection over the grazing lands near Goleta in order to ascertain the value of those lands for carob tree growing, the foliage of which is said to be a valuable cattle feed.

CITRUS AND SEMI-TROPICAL.

The Nile ranch, in Nevada county, has begun the marketing of the 1914 crop of oranges. While the orange acreage in that county is not large, the fruit is early, and this year's crop is said to be of excellent quality.

The Burt Brothers' olive-pickling plant at Palermo and the Heinze plant at Corning have opened for the season, and are now busily engaged on this year's crop. It is expected that 200 tons will be handled at Palermo.

At the regular annual meeting of the Orange Heights Fruit Association, held at Corona last week, it was brought out by the manager's report that there had been a total of 150 carloads of citrus fruits handled by the association the past year. New officers for the ensuing year were elected.

That a repetition of past experience with citrus scale may be averted and a better knowledge of conditions in Yuba and Sutter counties be secured, G. P. Weldon, Chief Deputy State Commissioner of Horticulture, and E. J. Branigan, Assistant in State Insectary, are thoroughly inspecting all citrus orchards in those counties.

Navel orange picking was started in the district adjacent to Oroville last week and a carload shipped. The oranges are said to be as well colored as the oranges generally are by the middle of November. It is feared that prices will be none too good, as the navels will have to compete with late Valencias from Southern California.

Although the fumigation of citrus orchards in Tulare county has been practically completed this year, it is the intention of the Horticultural Commissioner to continue till the weather becomes too cold. Commissioner Collins states that while there have been objections in some quarters to the fumigation work which has been done, he feels confident that by next spring the most skeptical will admit of its value.

After having signed up practically all of the orange growers and shippers in Tulare county, a permanent organization has finally been perfected which will insure the standardization of all fruit going from that county this season. A board of directors,

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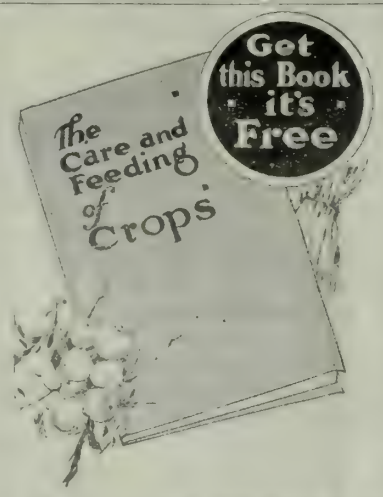

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consisting of eight members, representing all portions of the citrus districts, has been elected, who will be placed in charge of a standardization bureau, and will also issue certificates for each consignment shipped on which will be printed the fact that the fruit contained is up to the government standard of maturity, and also urging purchasers to buy only such fruit as contains such certificate.

GRAPES AND RAISINS.

Two carloads of Malagas and one of Emperors were being shipped daily from Sanger last week in drums. Redwood sawdust is used in the drums for preservation purposes.

Upon his return from the East Charles Teague stated that the reason California table grapes had not found good market east this year was due to the fact that a large part of the Eastern grapes which are generally made into grape juice were this year put on the market instead, as the production of grape juice has been larger than the markets could take care of.

In order to further the profits of the Associated Company, and also broaden the market for raisins, a special family Christmas box of raisins containing seven pounds, and selling for $1, will be available for shipment to any address in the United States. The packages will be artistically packed, and it is expected that large numbers of them will be sent East for Christmas presents by people all through the San Joaquin Valley.

Growers who sold their 1913 crop of raisins to the California Associated Raisin Company under contract were made happy last week by receiving $350,000 in addition to the money that they have previously received. This brings the total price received per pound up to 3½ cents a pound for muscats, 3¼ cents a pound for Sultanas, and nearly 4 cents a pound for Thompson Seedless. The company also declared a dividend of 5 per cent on all stock, thus adding an additional $50,000 to the stockholders, a big part of which is owned by farmers.

VEGETABLE CROPS.

The new cannery at Manteca has provided farmers in that section with an excellent market during the past season for all kinds of vegetables. Sweet potatoes and pumpkins are now being canned, and it is expected that the season will not be finished before Christmas.

The bean-growing contest which has been in progress in Monterey county has been finished, the agricultural clubs' competition having been a big success, and the boys are determined to go in for the prizes again next year. The winner of this year's contest is being taken on a visit to the University Farm at Davis.

Celery shipments have started from the Sacramento delta region, and from other points in the San Joaquin valley. Growers in the delta district now estimate that the crop for this year will reach 1,300 cars, and that the average value will be in the neighborhood of $1,000 a car.

The cannery erected and run for the first time at Fort Bragg this year by the Fort Bragg Growers' Association has completed a successful season. The fact that the 8,000 cans of beans which were canned were raised on an acre and a quarter of ground indicates that considerable future success may be expected with that crop.

From all points in the State it is reported that bean crops were never better. Limas in Ventura and Santa Barbara are said to be an unusually large crop; and while no large amounts have as yet been sold many growers believe that 6 cents will be secured in the near future. The crops in that section are already out of danger of rains, and there is every reason to believe that bean men will make a killing this year. Prices on whites at Stockton went up some last week on account of the rains, but it is thought that they will be sowewhat lower at an early date there.

FIELD CROPS.

Rice harvesting has been commenced in the rice fields of Butte county, and will be in full blast as soon as the ground becomes sufficiently dry to get on to with harvesting machinery. The yield is said to be good in spite of the unfavorable weather this season. Rice likes warm weather, and the cool weather this year has not been favorable for early ripening. A number of those who stacked their rice last year on account of late rains report good success, and if the rains will hold off long enough to allow of cutting this method may again be restorted to.

In line with the steps which are being taken to organize the hop growers of the Pacific Coast into a large and influential association, the Valley Hop Growers' Association was formed at Sacramento last week, those present representing 27,000 bales of the 65,000 bales raised in the valley. Reports from Sonoma county state that similar meetings have been held recently in Washington and Oregon, and that a big association is now assured. One of the objects of the association is to regulate the prices for which hops are sold.

FARM BUREAU NEWS.

A report very similar to the above comes from Glenn county, the rural districts of that county being almost unanimously in favor of the proposed undertaking.

A meeting was also held at Auburn last week for the preliminary organization of a farm bureau in Placer county, whose ultimate motive will be the hiring of a farm adviser.

Several branches of the Stanislaus County Farm Bureau have been organized during the past couple of weeks, and it is thought that in a short time sufficient names will have been secured to insure the establishing of a farm adviser in the county.

AN ERROR.

In our last week's issue a serious mistake was made by one of our informants as to the quantity of dairy products annually exported from New Zealand to London. The figures given stated that $110,000,000 worth were exported of which cheese amounted to $60,000,000 and butter $50,000,000. This should have been $21,750,000, of which there is $11,750,000 worth of cheese and $10,000,000 worth of butter.

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WRITE FOR BOOKLET "LIMING OF SOILS"

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Mechanical Power on the Farm.

SOME CARBURETER TROUBLES.

[Written for the PACIFIC RURAL PRESS.]

"My first motorcycle was an experiment station for pseudo-mechanics when things would go wrong, until I thought it would be just as well for me to get some of that experience, and save the price of questionable repairs. When I got the second motorcycle, I knew pretty well what to do when anything went wrong, so it was usually in good shape," said J. C. Loomis of the Pacific Rural Press staff recently.

"One thing I never had trouble with was the magneto. That was because I let it alone. No one but an expert has any right to take a magneto apart as so many garage men do, with harmful results. The only thing that I ever did was to clean off the contact platinum points carefully with emery paper.

"But I've had plenty of troubles with the carbureter. One point ought always to be remembered. In adujusting the proportion of the mixture, don't fool with the air valve but regulate the gasoline according to the exhaust, the weather and the smooth running of the engine. The least you can use and develop all the power needed without backfiring through the carbureter is the best proportion. It is more economical and less likely to carboncoat the cylinder. More is needed in starting a cold engine; less is needed in warm weather because it vaporizes more readily."

If you can't develop enough power, and the engine is not overheating and the exhaust is colorless, the trouble is probably due to lack of gasoline. Mr. Loomis took his girl on a long ride once and didn't get back on time because he didn't know that a little richer mixture of gas with the air in the carbureter would have given enough power for the desired speed.

The time to adjust the proportion of gas to air is while the machine is running. There is a handy finger wheel or other device on most machines to regulate the gas. Turn this while running, until the exhaust is discolored with too much gas. Turn it back until the speed slackens, then turn it the other way to increase the gas slightly. When the right position to supply the proportion most suitable for ordinary weather is find a file mark should be made on it for future reference.

Lack of gasoline may be due to other causes. Folks have been towed long distances because their tanks were empty. A certain system to follow in looking for the trouble should become a habit. Put a stick into the gasoline can to see if it is dry. Next turn on more gas. Then if still in trouble, drain the sediment bulb under the gasoline tank through the cock underneath. You may have to clean the gauze strainer, and if that has not stopped the flow you will have to clean out the feed pipe from there to the carbureter. Then if it won't run, screw the needle valve down tight several times to clean out dirt that might be clogging it.

Mr. Collins says that clogged feed pipes are among the commonest troubles of automobilists. It is hard to get absolutely pure gasoline nowadays, and water is one of the impurities that is not strained out. It collects in the sediment bulb until that is full of water and dirt, then it runs into the carbureter if the feed pipe is not clogged. Being no good for fuel, it causes misfiring and loss of power.

FALL PLOWING WITH TRACTOR.

The essential point that must be brought home to the farmer is the profit to him in using power. Consider for a moment the matter of plowing. A seed bed nine or ten inches is regarded as deep in this country. Can the ordinary farmer, in ordinary soil, get his seedbed prepared to that depth at just the right time, even though he realizes that extra two inches or so means just that much more room for plant roots to work in and that much more organic matter added to the soil thus broken up?

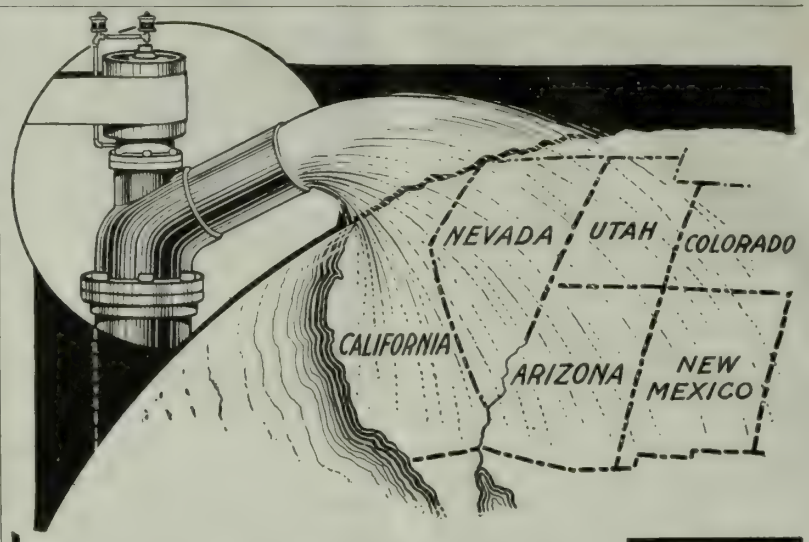
There are dozens and hundreds of communities where a medium-sized tractor and automatic gang plow, if bought jointly by several farm owners, or by one reliable operator backed by several others, will yieled big returns in increased crops next year by storing up humus and moisture through plowing this fall at exactly the right time and when the soil conditions are best. Early fall plowing gives trash, when buried, a longer time to rot and enrich the soil. More water and air is admitted.

Insure Against Dry Weather.—The men who plowed their fields last fall have not suffered as much from drought as those who plowed in the spring. The fall plowing stored up water from the winter's snows and from early spring rains. If you have read the crop reports this dry spring and summer, you must have noticed many complaints of burned-out crops where shallow spring plowing was done (particularly in the spring wheat section) while summer fallowing had stored up moisture that successfully resisted the severe drought.

Why not have this insurance of sufficient moisture on more farms in your community? If the drought hits next year, as it always does to some extent one year or another, plowing in the spring, even though deep, will be too late to conserve the moisture from the winter and early spring rains. The farmer says he has too many other things to look after in the fall to get around to fall plowing, possibly. That's just the point. It doesn't need to be a six-weeks' job. He should know what a good tractor will do for him. That is the very need you want to fill, to his profit and yours.

From all points of view, one can't get away from the fact that there are great advantages in the use of traction power on the farm, and particularly for plowing. For good yields, the seed bed should be roomy; it should be deep, of good tilth and rich in organic matter so that it will readily absorb heavy downpours of rain, and hold the water until it seeps into the deeper subsoils.

M. Rumely Co. M. R. D. OWINGS.



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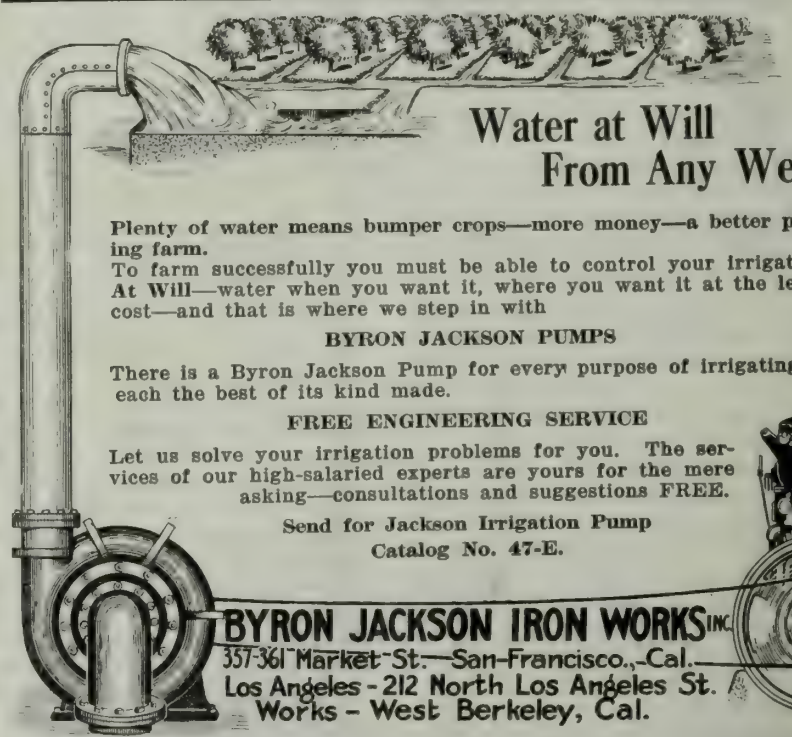

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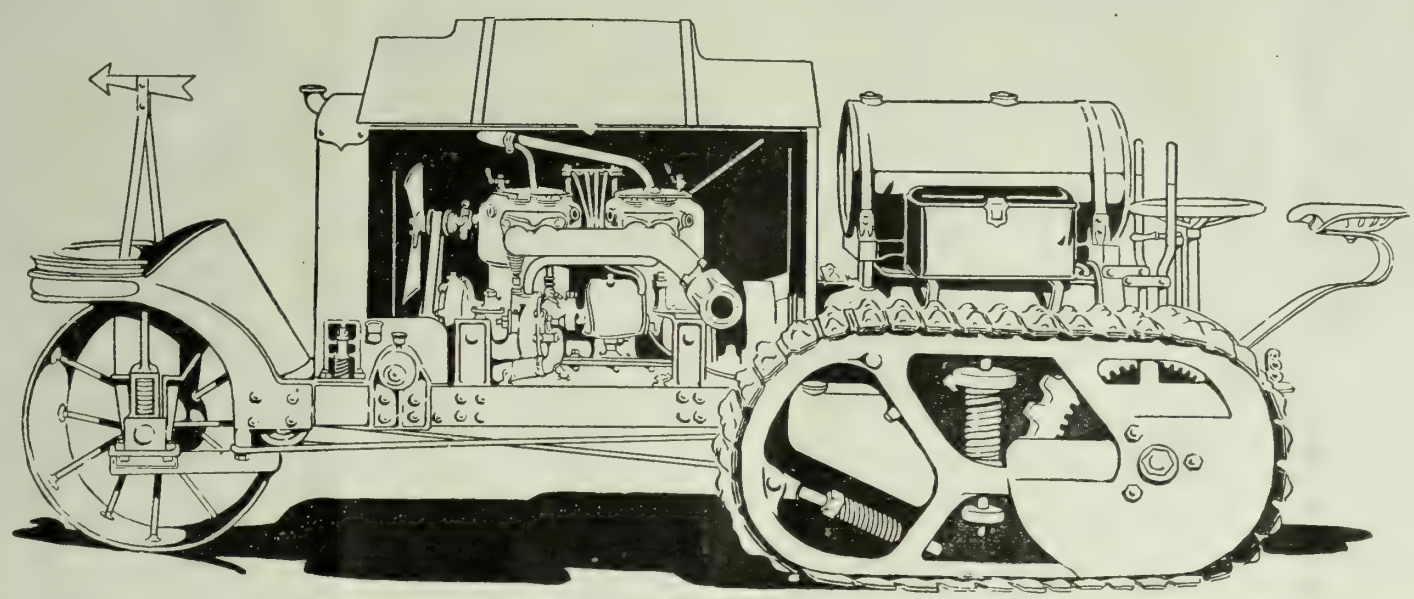

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Big Black and White Sale.

[Written for the PACIFIC RURAL PRESS by Wm. D. Guthrie.]

The first consignment sale of Holstein-Friesian cattle held in California, at Hanford, on the Kings county fair grounds, October 28, was pronounced by the consignors, buyers, and others interested in the black and whites, a complete success.

Never before has there been such an array of fine Holsteins sold under the hammer west of the Rocky Mountains. The dairymen of California are to be congratulated in having a chance to obtain, at their own price, such choice animals. Many of these animals would never have left the ranch of their owners had it not been for the fact that the breeders wished to make the first sale of this kind a complete success in order to pave the way for making the Holstein consignment sale a permanent institution in California.

Bidders came from all sections of the State. Some returned empty-handed, but most of them were able to find just what they wanted among the 94 head offered.

Many came just to get acquainted with the most popular dairy breed. Several became inoculated with the enthusiasm passed out by the older breeders, and seeing these fine animals selling for about the price of ordinary cows, decided that they could not invest their money in anything that would bring them in greater returns, and therefore bid in one or two.

The sale opened promptly at 9:30. From the beginning the bids were well distributed and came fast. By 6 p. m. the entire 94 head had passed under the hammer.

The total amount secured for the 94 head was $32,200, or an average of $391.15 per head. The 78 females averaged $408.91, and the 16 males $306. There were 15 that brought $500 and more apiece, whose names and prices paid are as follows:

Prince Juliana De Kol, consigned by Morris & Son, $1,000; Stratford Sozon De Kol 2nd, T. J. Gilkerson, $1,000; Edith Mandel De Kol 2nd, Morris & Son, $950; Prince Juliana Walker, Morris & Son, $900; Aggie Mechthilde Beets, McAlister & Sons, $625; Girlie Dekol, Morris & Son, $625; Girlie De Kol, Morris & Son, $625; Romeo Grace De Kol, Morris & Son, $625; Zampa Maud Muller, Guerin, $600; Colantha Juliana Belle, Morris & Son, $600; Romeo Benty Pietertje, Morris & Son, $525; Flossie Cornucopia Johanna, McAlister & Son, $500; Shadeland De Kol Roeltje 2nd, McAlister & Sons, $500; Alma Beauty Ferndale, Morris & Son, $500; Alma Goldstone Girlie Ferndale, Morris & Son, $500; Fidessa Goldstone Alcostra Ferndale, Morris & Son, $500.

The lowest price paid for any animal was $50 for a three-days-old bull calf; the highest $1,000, two animals dividing the honors. One was a beautifully marked, nearly white, two-year-old heifer, Stratford Sozon De Kol 2nd, by a son of Sir Segis Hengerveld De Kol, a grandson of the famous King Segis. She was bred and consigned by T. J. Gilkerson of Lemoore, and bought by J. G. Fakes of Patterson. The other was a fourteen-months-old bull, Prince Juliana De Kol Walker, a royal-bred animal, bred and consigned by A. W. Morris & Son of Woodland, and bid in by Mrs. G. S. Hewitt of Hardwick.

Of the 94 head sold, 45 stayed in Kings county, W. H. Ginn of Corcoran being the largest purchaser, taking home twelve cows that cost him $6,000.

It is the plan of the Holstein breeders to hold a consignment sale each year. We hope this will be carried out, for in no other way can the Holstein breed receive so much healthy and wholesome advancement.

Much credit for the success of this sale must be given Colonel Ben Roades, the auctioneer, who ably cried the sale, and to J. A. McAlister Jr., sales manager, also to the Merchants' Association of Hanford, who heartily co-operated with the consignors, fixing up the sale pavilion and providing autos to carry the visitors to and from the sale.

WITH THE LIVE STOCK MEN.

Eight registered Holsteins were sold to T. J. Gist, of Tulare, last week for a total of $1960. The herd was auctioned on the Fulgham ranch near Tulare.

The Old Home ranch near Chowchilla, Madera county, has recently shipped 600 head of cattle to market and has also just received 435 head from Nevada which are to be finished for market.

Two carloads of horses were shipped from Winnemucca, Nevada, last week by Gorham & Rankin, to San Francisco. They carried the "double square" brand and were said to be a fine lot.

Dairying in the South San Joaquin Irrigation District is rapidly coming to the front. Much of the alfalfa, which has been delayed on account of lack of water in previous years, has done well this season, and another year will see a large increase in the cow census of that section.

In writing to this office from Hanford, Robert Kimble states that he has sold seven choice registered Holstein cows and heifers to W. H. Ginn and Sons of Corcoran. Four of the heifers are bred to Mr. Kimble's bull King Segis De Kol Korndyke II, and all of them are sired by splendid bulls, which leads Mr. Kimble to believe that they will make good for their new owners.

While making this office a call last week, T. S. Glide, the Shorthorn breeder of Yolo county, informed us that he has recently sold 13 head of fine young bulls to J. J. Murphy, manager of the Weed Lumber company of Siskiyou county. Mr. Glide also reports a heavy demand for breeding stock from all quarters this year and expects to be sold out earlier than usual.

If you haven't written to Secretary J. I. Thompson of the Draft Horse Breeders' Association, about those purebred horses you have to sell, do so at once as it is necessary to know at an early date how many head will be consigned. A square deal is assured both seller and buyer.

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CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
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HOLSTEINS WANTED—Want heifer calves or yearlings, registered or grades, in exchange for gilt-edge alfalfa in Tulare County. Will make liberal deal, but stock must be well-bred, nicely marked, fine type, healthy and vigorous, and from heavy producers. R. H. Whitten, R. 5, Box 646, Los Angeles, Cal.

REG. HOLSTEINS — We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

TEN REGISTERED HOLSTEIN COWS for sale. Young and many with big records. Also a few well-bred heifers and bulls up to nine months old. K. W. Abbott, Milpitas, Cal.

AYRSHIRES—For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

WANTED—About 10 head No. 1 Holstein cows, 4 to 7 years of age, tuberculin tested. Have No. 1 Durham Bull, born December 10, 1913; sell or trade. Enterprise Farms, Newark, California.

REGISTERED HOLSTEINS—Young bulls sired by King of Riverside and Lakeside Model Prince from A. R. O. dams. J. H. Harlan Co., Woodland.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

JOHN LYNCH, breeder of Registered Shorthorns. Milk strain choice. Young stock for sale. Box 321, Petaluma, Cal.

FRANK MEACHAM, Petaluma, California—Breeder of Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal. High-class thorough-bred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I NOW HAVE to offer 5 Holstein heifers, sired by a son of King of the Pontiacs and by a grandson. Address J. W. Benoit, Route 2, Modesto, Cal.

FOR SALE—Three registered bulls. Shorthorn milk strain. I. T. Grounds, R. 1, Box 39, Kerman, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

CREAM CUP HERD—Registered Holsteins. Pontiac all calves. M. Holdridge, Modesto, Cal.

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HOLSTEINS—Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

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REG. HOLSTEINS — Bull calves. Julian-King of Riverside breeding. R. F. Anderson, R. 2, Modesto.

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REGISTERED POLAND-CHINA HOGS—Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

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DUROC JERSEYS—Prize Winning Boars and young stock for sale. J. K. Fraser, Denair, Cal.

REGISTERED BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

BERKSHIRES—Utility and choice Registered Pedigreed stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

POLAND CHINAS—Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

DUROC-JERSEYS—Both sexes for sale. M. L. Fleming, Hanford.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in state. $30 up. M. Bassett, Hanford.

REGISTERED POLAND CHINA HOGS—Cholera immune. W. D. Trewhitt, Hanford.

BERKSHIRES—Weanling males $10. Females, $12. J. M. Romberger, Modesto, Cal.

POLAND-CHINAS—Prize winners. Money makers. W. Bernstein, Hanford, Cal.

REGISTERED O. I. C. SWINE—Special sale of young sows. C. D. Conway, Lakeport, Cal.

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DUROC-JERSEY BOARS—Weanlings. Lindquist Bros. Turlock, Cal.

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REGISTERED POLAND-CHINAS—Large medium type. Prize winning stock. S. F. Williams, Chico.

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HOPLAND STOCK FARM—Registered Short-Horns. Prices on application. Hopland, Cal.

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YOLO COUNTY COW-TESTING.

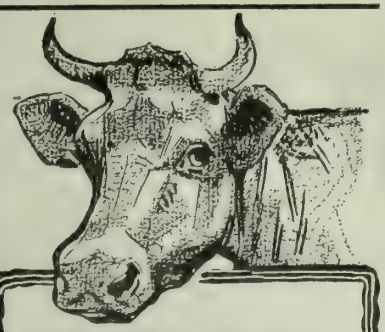
[Written for the Pacific Rural Press By J. F. Gross, Jr.]

The organization of the Yolo County Cow-Testing Association is proving to be a big step in bringing the dairy industry of this section up to a level with that of the most successful communities. The association was formed in the latter part of May, with twenty members and six hundred cows. The cost of a dollar and a half per cow is considered to be a cheap investment when the benefits derived are considered. An outfit was purchased and a tester was hired, who started to work June 1. During these four months the work has been going steadily forward. Although a year's test is usually required before any discarding is recommended, the tests revealed so many very poor cows that already about one hundred and fifty cows have been discarded, or 25 per cent of the whole number. The owners of these cows realized on a few months' test that some of their cows were kept at a loss, and immediately took steps to rid themselves of this burden.

The records of the association for the first four months show that the highest-yielding cow is a Holstein, which produced 223.5 pounds of butterfat during this period. She gave 6,689.4 pounds of milk, testing 3.5 per cent. The highest monthly yield for one cow was 76.031 pounds of butterfat. The average cow in the association produced approximately 24 pounds of butterfat a month, with a test of 3.75 per cent. The best herd average was 40.2 pounds of butterfat per cow per month during this four-month period.

In the off month of September two herds showed an increase of about two pounds of butterfat to the cow, due to better methods of handling and more regular feeding of green feeds. One herd's average showed an increase from 11 pounds during June to better than 19 pounds per cow in September, due to culling out of the herd.

The average cost of keeping a cow in this section is about $5. Therefore, with the prevailing price of butterfat, a cow must average better than 20 pounds of butterfat a month to pay her keep.



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—will increase your milk supply from 1 to 5 lbs. of milk per cow a day, and keep your cows practically free from udder troubles.

It is simply the pure, shredded root of the sugar beet with only the sugar and water extracted. (Can also be had with molasses if desired.) Swells to six times its original bulk when moistened—thus furnishing as great succulence as silage and more than five times as much nutriment. It is also a splendid feed for fattening; for horses, hogs, poultry, etc.

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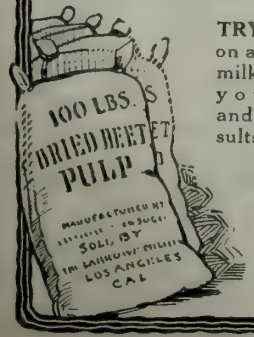

TRY 1 SACK on a cow whose milk record you know—and watch results.

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BEAN STRAW FOR FEED.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

A San Luis Obispo subscriber writes, "What is the feeding value of small white bean straw; would it feed well with corn silage, and if so, what proportion should be used?"

Bean straw is used to a considerable extent for stock feeding in bean growing sections and is considered a good feed, especially for cattle and sheep. It contains more flesh-forming substances (protein) than straw from cereals or corn stalks, but is, nevertheless, a starchy feed like these (nutritive ratio 1:11) and like corn silage. I take it that the inquiry refers to the value of straw for dairy cows, and in feeding it to these animals with corn silage, it will be necessary, therefore, to add some grain mixture rather high in protein, like barley and oilmeal, or barley, wheat bran and oilmeal; the former feeds in the proportion of 5:1, and the latter in the proportion of 3:2:1. Feed a pound of this mixture to every four to five pounds of milk yielded by the cows. This amount with, say 25 or 30 pounds of corn silage and as much bean straw as the cows will clean up will, doubtless, produce very satisfactory results "at the pail."

FLY KNOCKER.

What is a good fly knocker for a cow?—B. H., Grafton.

[A can of carbolineum will last a long time and is the best fly knocker I know of. Just moisten a cloth with a little and wipe it over the cow. The flies will give her lots of room.)

Skim milk and buttermilk are a lot more valuable than many suppose. Feed the hogs either of them along with a small ration of grain and alfalfa pasture, and the healthy hog will grow satisfactorily.

Save That Last Crop of Alfalfa
By Putting It in an
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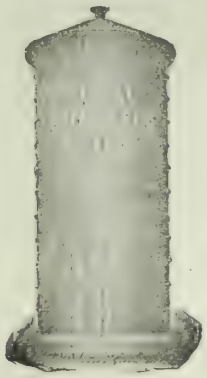

Alfalfa makes an excellent grade of silage, very palatable and nutritious and carrying a high percentage of protein. By letting this last crop grow to maturity and then putting it into an Ideal Green Feed Silo, you are beating nature at her own game, for it can be siloed in the rain if necessary.

Order Your Ideal Green Feed Silo NOW

and get it up ready for this last crop of alfalfa when it matures. You can commence feeding it just as soon as the silo is filled, and by next spring it will be empty and ready to receive the first cutting, that as hay is usually not worth handling, because of the weeds it contains and the trouble experienced in curing it.

Nothing excels silage, especially legume silage, during the dry summer months for keeping up the flow of milk. Next spring's filling will carry you through the best part of the summer, with the silo ready to receive that crop of corn next fall, thus providing a juicy, succulent feed all winter which will permit you to reduce the amount of mill feed necessary to buy at least 50 per cent, a saving more than sufficient to pay for the entire outfit.

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The Sale of the Year, where you can buy at BIDDER'S PRICES REAL HOLSTEINS of Character, the Blood that has produced WORLD'S CHAMPIONS. Carefully selected, choice individuals fashionably bred, the kind that will prove WILLING WORKERS and make BIG MONEY for the Purchaser. NOT A CULL IN THE LOT. HERD BUILDERS. You will find Big Hearty Cows — their Daughters and their Granddaughters all carrying the same splendid uniform dairy type. The Kind that CAN and WILL produce MILK and BUTTER in PAYING QUANTITIES. High Quality Bulls of the Choicest Breeding, carrying the blood of the Greatest Transmitting Sires and Dams of the breed. Families that have been bred for generations for great Milk and Butter Production.

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The only exclusive Alfalfa Seed dealers in the West.

Veterinary Queries and Replies

[Answered by Dr. Robert Boyd of San Francisco Veterinary College.]

MILKING TUBE NEEDED.

To the Editor: I have a cow that began giving bloody milk about four months ago out of one back teat. Then that quarter of her udder became swollen and sore and I had to tie her legs to milk her. I went to see a young veterinarian about it. He gave me some medicine for it. No more bloody milk came and in about a week the soreness went out of it, but a hard substance about the size of a marble formed in the upper portion of the teat, which feels like an enlarged vein. I thought that it would soon leave but it remains there and seems to almost entirely shut off the flow of milk. It takes me about half an hour to milk that teat. Is there anything to be done to relieve the trouble?—W. W. D., Carruthers.

[This obstruction is due to a growth of white fibrous connective tissue which is one of the phenomena of inflammation if of any length of time. The only thing for you to do is to use a milking tube, taking care that it is kept very clean. From your description I should say the condition is one which could not be operated on successfully, even if there was a veterinarian in your district.]

ABNORMAL TEAT.

To the Editor: We have a heifer about 16 months old that we bred about two monhts ago. Since breeding her we have discovered that she has five teats all the same size. We had never noticed the fifth teat till after breeding her, although we had handled her udder before that time. The fifth teat is very close to the right front one and it will be almost impossible to milk the two right front ones as they are near to each other. Will this extra one dry up before she freshens or will it have to be cut off? Could it be that the teat has developed since breeding her or have we always overlooked it? Kindly advise treatment.—G. K. W., Calistoga.

[This is an abnormality not very often seen in that position although many cattle have two rudimentary teats behind the normal ones. One of the two may be only rudimentary or, on the other hand, both may connect with the parenchyma of the gland, in which case we would advise the use of milking tubes. To cut either, if functioning, would end in disaster, and no veterinarian would undertake the operation.]

LAME HORSE.

To the Editor: I have a mare that went lame in one hind foot a year ago. I thought it was corns and turned her out to pasture all summer but as she did not improve had her feet examined. Found that she had no corns and as her ankle is swollen have decided it is a sprain. Can Dr. Boyd tell me what to do for it?—R. H. W., Oceanside.

[It is rather difficult to say for a certainty what is the trouble without an examination of the animal. I expect, however, that there is an "anchylosis" of the joint, causing a mechanical lameness, what horsemen call an "oscelette" in which case nothing could be done. If there is a veterinarian in your district I would advise you to consult him.]

OATS INSTEAD OF BARLEY.

To the Editor: I have a heavy bay mare that weighs about 1400 lbs. Small hard lumps are coming under the hide, mostly on neck, shoulders and body. The legs seem free from them. They cause her to scratch the hair off and seem to itch. Am giving her Pratt's condition powders in barley, twice a day, besides good grain hay. Can you suggest a remedy for these itching lumps, some of which are as small as peas? Otherwise the mare seems well and eats as usual.—J. H. C., Richfield.

[I would advise you to work off barley ration entirely and substitute good oats, but not too suddenly, and also put her on same perscription as advised for W. P. Hemet, in issue of October 1. These advertised condition powders are merely an expensive way, as a rule, of buying linseed meal and ground gentian root.]

GREEN WINTER FEED.

To the Editor: What is there in the line of greens suitable for poultry that can be grown without irrigation in this location?—G. P., Merced.

[Rape planted in fall or winter will send roots down and keep green through next summer. The soil must be moist and fine when it is broadcasted, to give the seed a chance to germinate. Giant kale planted now in moist soil will persist till spring when green corn is large enough to feed as fodder. Lay the kale plants slanting if the soil is rather dry, for it is said that thus the roots make greater effort to go down to moisture. Pumpkins, if handy will be good, or mangel beets. —Editor.]

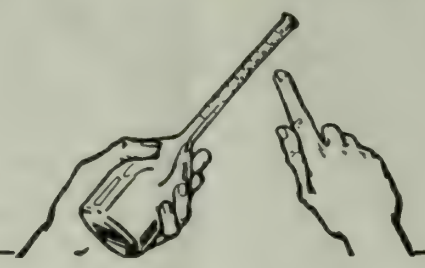
HOT CORN FODDER.

To the Editor: I have cut about 10 tons of fodder, and after letting it cure in bundles in the shock for about a month I put it in the barn. It was apparently very dry when it was put in but has begun to warm up quite a bit, and I should like to know whether I should take it out and stack in the open. If so what is the proper way to pile it to protect it from weather?—J. S. C., Grass Valley.

[If the corn becomes hot enough several feet from the surface, to be very uncomfortable for the hand, better throw a large part of it out quickly and open the barn for all the circulation possible. We would keep a careful eye on the temperature in the center for if it gets too not to hold your hand in, you will likely have spontaneous combustion. Otherwise would leave it in.

To stack corn fodder make a bed of straw on a well-drained spot to keep fodder from ground. Then lay several bundles lengthwise of the stack to raise the center of the rest of the fodder, which should be laid in two rows with butts outward, the tassel ends overlapping to keep the center always higher than the outer ends of the bundles, to make the stack shed rain. Top off with a single row two layers deep along center of the stack, finishing the ends with butts sloping outward and downward. Straw on top of that will help keep it dry. Don't tramp it much because that will break the leaves.

For convenience in using the fodder later, stack it as high as you can in short benches, one at a time. Then, taking fodder off one bench at a time from the end last stacked, none of it will bind the next bench.—Editor.]



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is made especially for cream separators by oil experts of 40 years experience who have studied the detail construction of the separator—this in order to produce an oil exactly adapted to the purpose. Your separator will do better work, last longer and need fewer repairs if lubricated with Standard Hand Separator Oil. *No matter what you pay, you cannot buy a better oil for the purpose.* Dealers everywhere.

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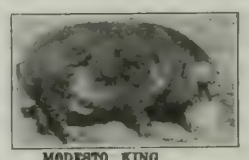

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Have 85 suckling pigs to pick from now. Ten more sows to farrow soon. Will have 20 bred gilts, also service boars for sale after showing at State Fair in September. Hogs are scarce. Order now for fall delivery.

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HOPLAND STOCK FARM BERKSHIRES
Registered
TEN SOWS and SIX BOARS
5½ to 13 months old
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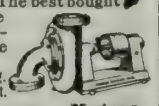

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I will sell this horse cheap if sold soon. For further particulars write me or come and see the horse.

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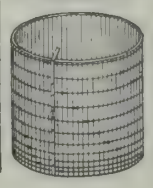

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Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.
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Healthy Hogs on a Grain Ranch.

[Written for PACIFIC RURAL PRESS.]

"I'd give $50 for Goodman's formula for keeping cholera out of his herd," was a remark credited to a neighbor of Chas. Goodman at Williams, Colusa county, the past summer when cholera was bad in most parts of that section.

According to Mr. Goodman himself, the only formula that he uses is good maagement. Under this head he incorporates a lot of things which really aid him most in keeping his herd healthy, namely clean drinking water, clean pens, and the keeping of his hogs free from lice and worms.

Of course there are other sources to be watched also, such as guarding against stray hogs from neighboring ranches where cholera is prevalent and taking care that the disease is not carried onto his ranch in other ways. Shooting and deep burial is the best formula for the first named.

Now keeping hog pens clean is simple advice, yet it is very little understood, as was shown by Mr. Goodman when he told us of a neighbor who had had more or less cholera for a number of years, cleaning houses and corrals and buying a new bunch of hogs each spring, only to be wiped out before the season's end. The thing he had forgotten was that each year saw the hogs rooting in the same old straw stack that their predecessors had rooted in. It is these little things which Mr. Goodman believes are of great importance in healthy hogs.

Clean water is supplied the hogs from the same well that the domestic water is pumped from, and the drinking troughs are kept in a sanitary condition at all times.

As to lice, they are easily disposed of in the summer through the use of crude oil, poured on the wallows and on corners of buildings or other places where the hog is apt to rub. In the winter the oil is poured onto the bedding, inside of the houses, thus thoroughly covering them with oil.

Worms are overcome by feeding liberal amounts of copperas, mixed with salt and sulfur. This mixture is put before them separately from the other feed and they are allowed to eat what they want of it. When fed in this manner there is no danger of their getting too much.

That his formula, as it has been called, is entirely practicable is demonstrated by the efficiency with which most of the proceeds from 163 acres of grain land have been secured, through hogs, in the past.

For a good many years Mr. Goodman, like most other grain farmers in that section, raised grain and ran a few hogs on the stubble during the summer and fall months, but finally decided that it would be much better for the land, to hog off all of the feed grown.

To do this, provision had to be made for all-the-year feed, and the system of cropping had to be changed from one where all of the land was plowed and seeded every year, to one where one-third of the land is seeded, one-third allowed to volunteer and one-third summer fallowed.

In this way the hogs are provided a pasture with the beginning of the winter rains and a long way into the summer on the volunteer fields, going from this onto the seeded fields in early summer, about the time it would otherwise be threshed. This keeps them in good feed till fall rains come again.

From a financial standpoint Mr. Goodman states that he receives about the same money from this system as he would from harvesting the grain, with the additional value of fertilization as extra profit.

It is the practice to raise two litters a year, 10 sows whose litters average about 7 pigs, being kept for breeding purposes. The breeding is so managed that farrowing comes in the spring and fall months, as it is very hard to be successful in raising young pigs during the hot summer months in the Sacramento valley. Fall pigs are really the best growers, as they get a good start before the rainy season and at a time of the year when the days are not excessively warm.

Purebred Berkshires are raised exclusively, only the strong, thrifty pigs being sold for breeding purposes, the balance being sold to the butcher.

The sows are bred at nine months to a year old, and if they prove to be good and prolific mothers they are kept in the herd until such time as they become poor breeders. This may occur at any age, but usually a sow makes a good breeder for five or six years.

The boars are seldom used before they are eight or nine months old, as continual use before that age is apt to render them of less value later on.

As no other feed except grain and volunteer grasses are available, tankage is purchased and has been found to be an entirely satisfactory substitute for skim milk, furnishing the protein which is lacking in other feeds grown on the ranch.

Although a firm believer in the need of more hogs in the State, Mr. Goodman believes that the present boom in hog raising by men who, to quote him, "do not know a hog from a holiday," will result in a great deal of future disappointment.

NO INDIGO FOR STRANGLES.

[Written for the PACIFIC RURAL PRESS.]

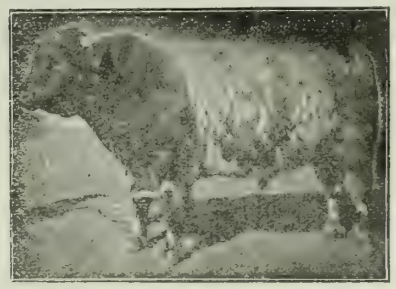
A subscriber writes of a stockman who uses indigo bluing in drinking water for horses with strangles or distemper. Dr. Robt. Boyd writes as follows: "Mr. Harvey is mistaken. 'Distemper' or strangles is an infectious febrile disease caused by a specific bacillus (the streptococus equi) and as such runs a certain definite course. The disease has several irregular forms, and many complications may arise. Such a remedy as indigo bluing would have no effect on the disease. Indigo blue or indigotin is not used in veterinary medicine except as a test for nitric acid, so far as I am aware. If administered, it would in all probability be oxydized and excreted as 'isatin.' I would certainly say it is inadvisable to administer it to a horse suffering from strangles."

Hillcrest Stock Farm

DAVIS, CAL. T. S. GLIDE, Prop.

Breeder of Shorthorn Cattle, French Merino and Shropshire Sheep.

At 1914 State Fair our Shorthorns took first prize in every class we entered except two, and in these were beaten only by stock of our blood. We took all the herd prizes, first and second prizes in produce of cow and first in get of sire.



KING LANCASTER, 3 times Grand Champion

Below is a list of our Grand Champion bulls for the last eleven years—a list that will stand for quite awhile:

1904—Hillcrest Hero
1905-1906—King Edward (Aso Grand Champion World's Fair at Portland.)
1908—King of Greenwood
1909, 1910, 1911—King Lancaster
1912—Greenwood Knight
1913—Greenwood Knight
1914—Greenwood King

All except the first two of the list were bred by us. We have beaten a number of bulls that were bought in the East at prices ranging from $500 to $3000 and brought out here to beat us.

Range raised young bulls for sale, single or carload lots.

Oak Grove Berkshires

Cholera Immune

Our herd is Cholera Immune, the only immune Berkshire herd in the State.

Five herd boars in use and they are second to none on the coast. Our sows are of equal merit.

We have at present some 300 Berkshires and we know that we can supply what you want. Write us or call.

Oak Grove Dairy Farm

H. G. ARMSTRONG, Prop. WOODLAND, CAL.

Don Adonis of Linda Vista.

BERKSHIRES — GUERNSEYS

Our BERKSHIRES are the finest in the State. At the last State Fair we entered in fourteen classes and won ten firsts.

Stock of all ages for sale.

GUERNSEYS—We offer for sale bull calves of A. R. breeding on both sides. Some by Don Adonis of Linda Vista, whose dam, two grand dams, and two great grand dams have an average record of 714 pounds butter-fat in one year.

GRAPEWILD FARM,
A. B. Humphrey, Owner
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SHIRE HORSES

Another Victory for the Shires

At the State Fair just closed, the Shire Stallion SEVERN PILOT, imported by the Salvador Stock Farm, won the Stallion Registration Board's trophy and $100 for the best draft stallion of any breed to be shown with three of his get.

If you want to raise draft horses, get a Shire stallion

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LARGE TYPE
YOUNG STOCK FOR SALE. BOTH SEXES.
W. H. Browning, Prop. Woodland, Cal.

Poultry for Profit

[Written for the Pacific Rural Press
By Susan Swaysgood, Pomona.]

Winter Eggs.—I am looking for about the same prices as usual. The prices will be right if we can get the goods; and that is our part of the problem at present.

The following method of getting winter eggs is told by Mrs. W. F. Denton, and if it helps any one to see the point she will be pleased.

"A great many people call it 'luck' if you are able to get eggs when the prices are high; but it is not luck at all—it's good feed of the right kind, proper housing, and looking to the comfort and well-being of the flock.

"Begin first with the houses; see that they are well lighted and aired. Have, if possible, a scratching shed facing the south, or any way that is out of the cold winds that come in your locality. Our winds come from southwest, so that south would not do for us. Most of the wind in and around Riverside comes from the north, so that this question is one that can be best settled by the locality.

"Have no drafts, but don't imagine fresh air is a draft. A draft is a flow of air that is confined and just finds a leak somewhere. If that strikes your fowls it means cold and roup.

"Get your flocks well settled in the houses at least a month before the summer weather is over; and provide them straw or leaves to scratch in, and don't be stingy with it. Have it knee-deep if you can, so that your birds must scratch in it for all they get of grain. A hustling hen is a singing hen. And you all know that a singing hen is a laying hen, and it's the laying hen that pays.

"For the morning feed I give the best prepared scratch feed I can buy; we never use poor feed, no matter how cheap in price. Of the scratch feed I give a quart to every twelve hens in the deep litter at 8 a. m. At the same time I give warmed water in winter and late fall when the mornings are cold. At 10 a. m. I give a few handfuls of sprouted oats or rye if there are none sprouted. At noon I feed a warm mash. This consists of boiled potatoes or parings, stirred into bran, alfalfa meal, and a little middlings. I feed only what they eat up right away. As we always have milk, I never feed meat of any kind that has to be bought. Sometimes the boys hunt rabbits and these are boiled up and fed to the hens and the soup from this mixes the mash. I put coal ashes on the floor of the laying house, and they go at them, scratching and singing, picking out the flakes of lime or pieces of stone. Once a week I give a little soda and ginger in the milk, allowing a teaspoonful to every gallon used. This I think helps to keep the crop sweet. I never feed drugs, dope, or any kind of poultry tonic. I tried that once and learned that a lot of eggs at one time meant a famine in the future. If hens are fed right they will lay without tonics.

"Warm the Feed.—In winter I set the pans of scratch feed in the warming oven while I get breakfast, and warm all the food that can be warmed. To that I lay most of my success in getting winter eggs. I try to give the hens as near summer conditions as possible. Milk is warming for them on the back of the stove while the scratch grain is warming in the oven. One other thing: I feed regularly to the minute, hens know when breakfast time comes and resent any overtime. If you want eggs in winter from hustling hens, just hustle yourself first."

Feeding Animal Food.—Where milk can be had as was the case with Mrs. Denton, it takes the place of meat fully, no doubt need be entertained on that score. But those who are not so favored as to have milk must provide some form of animal food for both ducks and chickens. Ducks suffer more in comparison than do hens for lack of meat. They often die in numbers when young if meat is withheld from the ration; and laying ducks need as high as ten to fifteen per cent of animal food.

Stunted Ducks.—Is it right to breed ducks stunted by being allowed in water too young?—N. L.

[In your case it will be all right for one generation. It is not the same as if they had been bred from stunted stock.]

CARING FOR THE POULTRY MANURE.

This is a good month to distribute the poultry manure. Get it spread on the garden patch before the rains come. Then after the first rains, plow or dig it under; level the ground and plant your garden truck. If you never could grow a winter garden before, you will after you once enrich the land with poultry droppings. It isn't wise to dig it too deep or the young plants may not reach down to it, but if the land is plowed, it is a good idea to put a light layer on top, then when the next rain comes it will carry the liquid from the droppings down to the plants. Cabbages and cauliflower are gross feeders and they grow immense when fed plenty of poultry droppings. But it should be done soon to get the full benefit. We have cauliflower plants now two or three feet high and commencing to head out. Two years ago this land was so poor that positively you could not raise a disturbance on it. I was the most discouraged mortal you ever saw, because in Sonoma county I had the best land in California. Then to move onto this poverty flat was too much of a change, but I want to tell you that it is all right now. Poultry droppings and water are making things grow on this poor land. And they will do it on any land. The manure should be kept dry during the summer months. If it gets wet some of its value escapes into the air; but when kept dry, it is all right. Old barrels or boxes can be used to store it in until fall, when it should be spread before the rains come.

And another chore that can be very well done is to gather all the dry leaves you can for the brooder house in hatching time. Dry leaves are the ideal litter for little chicks, light and yet effective in hiding the little grains so the chicks have to exercise to find them. Straw and alfalfa are heavy, compared to leaves; then too, they kind of pack with the chicks running on them, but this never happens with leaves. Anyone that has a prune or apple orchard can soon rake up a few sacks of leaves that will be worth dollars in a few months. This is no experiment with me, for I always gathered prune leaves for my chicks, and enough for them to have a good bed if needed. They make good litter for ducks' beds and for hens' nests and several other things and they cost nothing but a little thought and time to gather and store away.

Roup Again—Our chickens have sore throats and heads, also breathe with difficulty, and some get blind and die. One turkey's head is swelled and elevated around eyes. Can you tell me what it is and is there any remedy?—Subscriber.

[From your description I fear your chickens have both roup and canker; it may be diphtheretic roup. If it is you will be able to distinguish it by the foul odor from the throat. Plain canker does not have that odor, but all cases of roup have a roupy smell that any old poultryman can tell a mile away. You will

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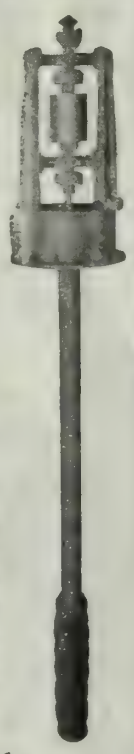

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WANTED—Responsible party to take charge of business in each county. New Automatic Combination Tool, combined wire fence stretcher, post puller, lifting jack, etc. Lifts or pulls 3 tons, weighs 24 pounds. Sells to farmers, shops, teamsters, etc. Descriptive catalogue and terms upon request. Harrah Manufacturing Co., Box M. Bloomfield, Ind.

WANTED—Agricultural College graduate with practical experience wishes position on stock or dairy ranch, at present taking short course at University Farm, which ends Nov. 14th. Box 340, Davis, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

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Dealers in PAPER — 37 FIRST STREET, SAN FRANCISCO; Blake, Moffit & Towne, Los Angeles; Blake, McFall & Co., Portland, Oregon

have to decide that question for yourself. If the odor is just plain roup it is easy to cure; but in order to prevent more cases you must find out how the chickens got it. The fall of the year marks a change to which chickens are very susceptible, and they should be properly housed and cared for. The first thing is to fix up all the cracks in the building. Have the front open but three good wind shields around them on back and ends. Give the fowls a dose of physic in a warm mash at night. It may be coal oil if you have nothing else handy, allowing half a teaspoonful to each fowl or turkey. A pill of Bromo laxative which is sold as a grippe cure works well on turkeys. Now take the worst cases, those having swelled heads, and dip their heads in a can of coal oil; hold them under until they gasp for breath, wipe off the extra oil and put them in a good open-air coop with plenty of litter to scratch in, feed them nourishing food such as oats, ground or whole, wheat, and a little fresh meat. For those cases with sore throat sprinkle powdered bluestone over the yellow patches and it will kill canker, but if the odor is from diphtheretic roup it is cheaper to kill and cremate the carcass at once. Now you have a fight on your hands because it means clean up and scald every feed trough and drinking vessel you have; for there is where the germs will hide, and you don't want to forget that roup is a germ disease. Turkeys of E. E. S., Modesto, have roup also.]

THE STOCKTON POULTRY SHOW.

[Written for the PACIFIC RURAL PRESS By James D. Yates, Modesto.]

Stockton gave one of the first of the winter poultry shows of the season to be held in the San Joaquin and Sacramento valleys last week.

Stockton always does herself justice in putting on a big show and one of quality. That this was true this year may be seen from the fact that there were birds from as far east as Ohio and as far north as Eugene, Oregon. No doubt a great part of the success of the show was due to the hustling of the wideawake secretary, Wm. H. McKay.

From the tall, bold and attractive Minorcas to the little meek and submissive bantams the show-room was kept lively by the different crows and cackles which make the barnyard sound so homelike in early morning.

Among some of the more prominent winners were Mrs. C. M. Smyth, Stockton, breeder of Buff Orpingtons, who carried away several firsts and specials, having one of the best strains of Buffs on the Coast. Chas. F. Holman, Stockton, breeder of Anconas, Buff Orpingtons, White Orpingtons, Dark Cornish, and other varieties, made an excellent showing, carrying off cup for best bird in show on Dark Cornish cock. B. C. Queisenbery, Lodi, had a number of birds on exhibit, and won best White Rock in the show on White Rock hen and best colored R. I. Red in R. I. Red Club, besides other good winnings. Emma F. Reid, San Jose, won largest cup for best display of one variety on her Houdans. John Mee, St. Helena, won several first prizes on Bronze turkeys and guineas. The Eveline Poultry Farm of Ceres won firsts on White and Fawn Indian Runner ducks.

Jack Lee gave an interesting lecture on caponizing, which was well attended.

The judging of the show was done by W. L. Russell of Ottumwa, Iowa, and Will Purdy of Washington on chickens; W. J. Head of Oakland on pigeons, Arthur F. Pelty on rabbits, and Ben Woodhull of Stockton on bantams, all of the judging having met with general satisfaction.

An orchestra added to the enjoyment of the evenings, the booths of the feed and manufacturing firms also adding to the attractiveness of the show. Among the feed concerns exhibiting were Coulson Co. of Petaluma, Spratts of San Francisco, and Joe Ginelli of Stockton.

The Victor Incubator Company of Decoto had a number of their excellent machines on display, also a number of brooders. The Rogers Manufacturing Company had their takedown houses set up, which were viewed with a good deal of interest.

Lack of space does not permit of giving a full list of the awards, but it was evident that the San Joaquin breeders can hold their own with the best on the Coast, as competition here came all the way from Los Angeles to Oregon.

POULTRY SHOW NOTES.

In order to create added interest among the school children of California in pet stock, pigeons and chickens, the San Francisco Poultry, Pigeon and Pet Stock Association are making provision for such exhibits at the coming poultry show to be held in San Francisco comcencing December 8.

Entry blanks are now being sent to all of the children in San Francisco and surrounding sections. Prizes will be awarded for the following classes: Canaries, parrots, and other birds, best bird-cage or house, guinea pigs, rabbits, squirrels, chipmunks, mice, snakes, lizards, frogs, gold fish, poultry, pigeons, dogs, cats and growing flowers or shrubs. That the plan is meeting with widespread approval is evident from the fact that the San Francisco public schools are not only endorsing the plan, but are taking active steps towards its success. All entries should be sent to Frederick W. d'Evelyn, 314 Phelan Building, San Francisco.

At Sacramento this week a successful poultry exhibit is being pulled off. Next week Santa Cruz will show off its fine birds.

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The Home Circle

HOW TO MAKE THE FARM KITCHEN AN EFFECTIVE WORKSHOP.

Improvement in the arrangement of the farm kitchen will result in saving the energies of some 8,000,000 people and make their work less heavy and more enjoyable, according to Farmers' Bulletin No. 607, issued by the U. S. Department of Agriculture.

This bulletin, entitled "The Farm Kitchen as a Workshop," discusses not merely the proper location of the kitchen with reference to other parts of the house, but gives details as to the best methods of treating its floors and walls, and gives well-tested floor plans for the step-saving arrangement of the sink, stove, table, and other kitchen utilities.

The author states that a small, compact kitchen saves many steps and much useless labor in the preparation of food. This, however, is in homes where the kitchen is merely a workshop, and not used also as a general-purpose room where meals are served and where the family gathers to enjoy warmth of the stove.

Whether the chief exposure of the kitchen shall be north, east, south or west, is a matter governed by individual preference and local conditions. A kitchen which receives the morning light is usually desirable. Effort should be made, however, to secure light from two directions and cross ventilation. For this purpose, the kitchen should be located either in a corner of the house or in a narrow part where there can be windows on opposite sides. It is well, also, to locate the kitchen so that clouds of dust may not be blown in from the road, and it is of even greater importance that the kitchen be so located with reference to barns and other outbuildings that the prevailing winds will not bring unpleasant odors or flies from them.

In many farm houses a very large kitchen is provided, because it must handle the unusual cooking for harvest hands. The writer points out that it will be better to provide a temporary shed or a kitchen on the porch, with oil stoves or other cooking devices to handle this unusual rush and thus allow the housekeeper to have a smaller kitchen during the rest of the year.

The size of the kitchen, unless a large pantry or storerooom is provided, is also governed somewhat by the amount of supplies which must be stored. In the case of a farm distant from town, supplies necessarily must be bought in bulk and need sufficient storage space. In such cases it is sometimes wise to provide an extra pantry or storage room. In arranging the pantry, however, especially if it be between the kitchen and dining room, care should be used not to make it too large, as a long passageway between these two rooms adds necessarily to the labor of the women.

The kitchen, the writer finds, should be so located that it will be especially convenient to the pantry, dining room, storeroom and cellar. At the same time access to other parts of the house should be easy from the kitchen, although it is unfortunate if the kitchen is made the principal entryway to the house. She particularly urges that it be on the same level with the pantry and dining room, as steps, even if only one or two, mean the extra work of lifting and lowering the body up and down them many times a day and lead inevitably to greater breakage of crockery.

For reasons of general convenience too, the refrigerator should be on the same level as the kitchen. Similarly, for much the same reason the writer urges that the refrigerator or icebox be so arranged that it can be filled from outside. If the rear opening of the icebox is tightly joined to the opening in the wall of the house, and this opening is screened with strong wire netting, the back of the icebox can be left open in winter and the food kept in cold air without chilling the rest of the house.

The floors, walls and ceilings should have a plain surface and be free from cracks, ridges, mouldings, or other raised ornaments which catch dust and dirt, are difficult to keep clean, and afford harboring places for insects. Walls covered with washable paint or washable wallpaper are easier to clean than those simply tinted, though the latter can be readily renewed. Light colors are preferable, greenish grays being desirable if the exposure is toward the south, and light yellows or creams if the kitchen gets its light principally from the northeast.

Of course, tiling or vitrified brick or metallic tiling are better than paint, tint or wallpaper, which have to be renewed, but these are more expensive. Where the walls are painted, a better surface results when a coat is applied every year or two than when several coats are applied at once. A final coat of enamel paint or outside varnish is desirable for woodwork that needs cleaning frequently. The ceiling may be finished with whitewash or one of the commercial preparations.

Unfinished wooden floors are one of the great burdens of the housewife, as they can be kept clean only by frequent scrubbing, and in spite of care show spots and stains. Soft wood quickly becomes rough and splintered. Soft wood can be bettered by the application of special floor paints. Hard woods can be made less absorbent by the application of wood fillers which are common commercial preparations. Where unseasoned boards are used, cracks are likely to occur from shrinkage, and these should be filled, putty being sometimes used—and sometimes commercial preparations designed for this purpose.

Lighting, ventilation and heating are particularly important in the kitchen. For ventilating purposes, a window that goes to the top of the room, with a top sash that can be readily raised and lowered, is especially good, as it lets out the hot air which naturally rises. A window pole can be provided for closing the top sash. In lieu of a window opening at the top, small windows for ventilating purposes may

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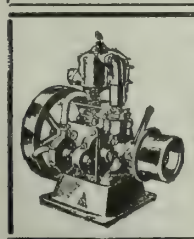
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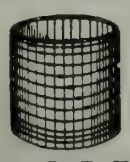
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be provided near the top, over the cupboard, table or sink. These will be most convenient if they are hinged and arranged so that they can be opened and closed by pulley and rope. There can hardly be too many windows in a kitchen. Glass panels in doors also allow light to penetrate into dark places in closets or passageways. Where there is danger of breakage, wire glass should be used, and where privacy is desirable, frosted or similar glass can be selected.

For summer in northern states, and for all-the-year use in warmer regions of the country, there should be a screened porch opening off from the kitchen on the side which is not exposed to the sun during the hottest part of the day. Much of the kitchen work may be done here and this will add greatly to the comfort of the worker. Some prefer to have such a porch open on to the garden, but others find a screened porch with no opening preferable, just because it gives better protection against flies. All windows should be screened to keep out flies and other insects which are disease carriers, and a cause of discomfort. Where frame screens are not obtainable, flies can be kept out by tacking wire netting 16 meshes to the linear inch over the openings. The screen should cover the entire window opening, so as to permit the opening of either sash.

DANDELIONS IN LAWN.

To the Editor: My bluegrass lawn is being choked by dandelions. What shall I do to get rid of dandelion? Or what lawn grass would you suggest?—Mrs. E. W., Hollister.

[We have seen many bluegrass lawns from which dandelions had been dug by running a chisel-ended knife diagonally into the ground to cut the tap root of the dandelions three inches underground. The plant is then easily pulled by hand. A wood chisel, beveled on only one side of the end, inserted with the bevel edge underneath, makes a most satisfactory tool. Hire the boys and girls to do this. There are other lawn grasses but none to our mind that are so ornamental as bluegrass where it grows well.—Editor.]

Mr. Smith, out walking with his small son Bobby, met Mr. Brown, a fellow-architect. They strolled along together, and patronizingly picked out the good and bad qualities of the new buildings they passed. Presently Bobby spied a spotted dog. "Look, Father," he said scornfully, "look at that dog. I don't like it. There's too much work on it!"—Everybody's Magazine.

THE CLOCK'S TWO HANDS.

"Come, hurry up!" said the second-hand of a clock to the minute-hand. "You'll never get around in time if you don't. See how fast I'm going," continued the fussy little monitor, as it fretted around on its pivot.

"Come, hurry up!" said the minute-hand to the hour-hand, utterly oblivious of being addressed by the second-hand. "If you don't be quick, you'll never be in at the stroke of one."

"Well, that's just what our young friend there has been saying to you."

At this point the clock pealed forth the hour as the hour-hand continued:—

"You see we're in time—not one of us behind. You take my advice—do your own work in your own way, and leave others alone."

Moral.—Mind your own business.

HONEST ADVERTISING.

Bill Nye, the lamented provoker of smiles, once had a cow to sell, or professed to have, and he advertised the animal in this manner:

"Owing to my ill health, I will sell at my residence in township nineteen, range eighteen, according to government survey, one plush rasberry cow giving milk frequently. To a man who does not fear death in any form she would be a great boon. She is very much attached to her present home with a stay chain, but she will be sold to anyone who will treat her right. She is one-fourth Shorthorn and three-fourths hyena. I will also throw in a double-barreled shotgun which goes with her. In May she usually goes away for a week or two and returns with a tall red calf with wabbly legs. Her name is Rose. I would rather sell her to a non-resident."

First soldier—If you really believe you won't die until your time comes, why do you dodge every bullet that comes along?

Second soldier—Because my time won't come so long as I am able to dodge 'em.—New York Times.

The Future Man or Woman
The food taken by the nursing mother influences the physical development of the child. Children should be fed on nothing but the most strengthening foods.
Ghirardelli's Ground Chocolate is both a food and a drink.
Children need no coaxing to take it. They like it and thrive on it. It is the final expression of purity, wholesomeness and deliciousness.
The cost is less than a cent a cup. Begin using it tomorrow.
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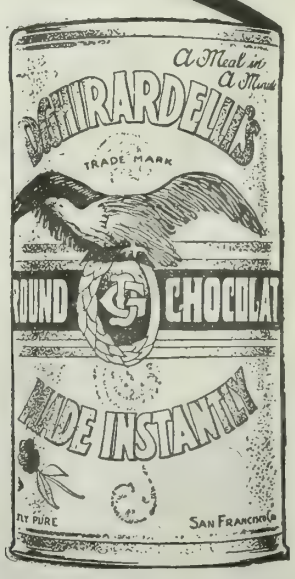

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The Markets.

(Unless otherwise noted, prices quoted are f. o. b. San Francisco.)

San Francisco, Nov. 4, 1914.

WHEAT.

A heavy export business at many points continues to dominate the market, and with supplies in producing districts rapidly decreasing there is a strong feeling as to values. There is a fair demand locally and while prices are not quoted higher, the tendency is distinctly upward.

Cal. Club, ctl	$1.85@1.87½
Forty-fold	1.85@1.90
Northern Club	1.85@1.87½
Northern Blue'm	2.00@2.10
Northern Red	1.85@2.00

BARLEY.

There has been a sharp revival of demand in the east, resulting in a larger speculative business here than for some time past, and an upward revision of the spot figures. There is still a good deal of stock in the country, but it is moving off rapidly.

Brewing & Shipping	$1.17½@1.20
Choice Feed, per cal	1.15 @1.17½
Common Feed	Nominal

OATS.

The shortage of the Canadian crop tends to draw supplies out of the north, and the local market is stiffening up in sympathy, both red and white feed showing a further advance.

Red Feed	1.45 @1.50
Seed	1.65 @1.90
Gray	Nominal
White	1.55 @1.60
Black Seed	1.75 @2.25

CORN.

While the movement here is limited, corn is offered freely in the east, and the market has a rather easy tone. Local values, however, are unchanged.

California Yellow	Nominal
Eastern Yellow	$1.80 @1.85
Eastern White	Nominal
Egyptian	1.60 @1.65
Milo Maize	1.75 @1.80

RYE.

This grain remains nominal, with little offered on the spot and not enough in demand to establish prices.

Rye, per ctl	Nominal

BEANS.

In several lines a little reaction is noted from the recent low level; bayos, large white and red beans being marked up quite sharply, while small whites are also doing a little better. Threshing in several sections has been considerably interrupted by damp weather, and with a very brisk demand for spot supplies the market has developed considerable strength. It is still a little uncertain whether the market will hold up when the harvest is completed, but the outlook seems, on the whole, to be fairly favorable. Importers expect to offer a lot of Manchurian speckled beans in competition with pinks in December, but it does not appear that values will be greatly affected.

(On wharf.)

Bayos: Cal. per ctl.	$ 4.75
Blackeyes	4.00 @4.25
Cranberry Beans	3.65 @3.75
Horse Beans	3.00 @3.50
Small Whites	3.90 @4.10
Large White	3.75 @4.00
Limas	5.25 @5.30
Pea	4.25 @4.50
Pink	3.00 @3.10
Red Kidneys	5.00
Mexican Red	5.25

SEEDS.

The demand in most lines has picked up in good shape in the last fortnight. Values show no quotable change.

Alfalfa	17@18c
Crown Mustard, per lb	Nominal
Canary	Nominal
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Local prices are firmly maintained, but so far have made no further advance. Local trade is fairly active, and there is considerable shipping business.

Cal. Family Extras	$6.60 @6.80
Bakers' Extras	5.50 @6.00

HAY.

Arrivals are about the same as for the previous week, and there is apparently no longer any pressure to move hay from the fields, though there appears to be a liberal supply remaining in the country. Current supplies here, however, are largely coming from warehouses. The bulk of the offerings are not of a quality to command a ready market. The export movement is keeping up well, but will have to be larger than it has been so far to give much strength to the market. Supplies of alfalfa are very heavy, and do not find ready sale.

No. 1 Wheat, or Wheat and Oats	$8.00@10.00
do No. 2	6.00@ 7.50
Barley	5.00@ 7.50
Tame Oats	6.00@10.00
Wild Oats	5.00@ 7.00
Alfalfa	6.00@ 9.00
Stock Hay	4.50@ 5.00
Straw, per bale	30@ 45c

FEEDSTUFFS.

Rolled barley has been marked up a little, owing to the advance in the whole grain. Other lines are unchanged, though bran remains rather easy, with liberal offerings from the northern mills.

Alfalfa-Molasses Meal, per ton	$19.00@20.00
Alfalfa Meal, per ton	14.00@15.00
Bran, per ton	28.00@29.00
Oilcake Meal	Nominal
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	24.50@25.50
Rolled Oats	32.00@33.00
Shorts	32.00@33.00

VEGETABLES.

The local market is getting into stronger shape than for some time past, owing to the gradual decrease in offerings of several varieties. While a good many tomatoes are still coming in, shipments have dropped off quite a bit this week, and all offerings find ready sale at sharply advanced prices. String, wax and lima beans are slightly higher, and fancy lots of egg-plant bring an advance. Green corn is slightly lower, though there is not much offering. Celery finds a lively demand, and both Delta and Bay stock moves off readily at slightly better values.

Green Peppers, bell, lugs	35@ 40c
Green Peppers, Chili	40@ 50c
Carrots, per sack	35@ 50c
Tomatoes, lugs	40c@ 75c
Beans: Wax per lb.	2½@3½c
String	2½@3½c
Lima	3½@4½c
Cucumbers, lugs	40@ 60c
Eggplant, lugs	25@ 60c
Green corn, sack	90@ 1.75
Summer Squash, box	35@ 50c
Cream Squash, box	30@ 40c
Okra, box	30@ 40c
Celery, doz	20@ 25c
Do. crate	1.00@ 1.50
Sprouts lb	2@ 3c

POTATOES AND ONIONS.

Values on all lines stand as before, and business is of moderate proportions here, with little outlet in shipping channels. First class potatoes are scarce at Portland, but are supplied from Idaho. A good many onions are going into storage.

Potatoes: Salinas, ctl.	$1.40@ 1.60
River Burbanks, ctl.	60@ 80c
Sweet Potatoes, ctl.	1.40@ 1.50
Onions: Yellow, sack	40@ 50c
Garlic, per lb	10@ 15c

POULTRY.

Supplies of eastern stock have been quite large, and while no very large shipments are coming from local points, the market is well supplied and easy. The only quotable decline, however, is on young roosters.

Turkeys, lb	19 @25 c
Large Broilers	20 @22 c
Small Broilers, per lb	20 @23 c
Fryers	18 @19 c
Hens, large, per lb	17 @18 c
Hens, extra, er lb	17 @18 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb	17 @18 c
Squabs, per doz	2.00@ 3.00
Geese, per pair	2.00@ 3.00
Ducks, doz	4.50@ 8.00

The Use Of
Hercules Dynamite
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HAVE You Received *Your* Copy of "Progressive Cultivation"?

AMONG the hundreds of coupons we receive every month requesting copies of "Progressive Cultivation" there are always a few the senders of which have neglected to fill in the lines provided for the name and address.

We do not want any man to feel that we have neglected his request. In cases where name and address are lacking, however, we can do absolutely nothing.

Have you written for "Progressive Cultivation" and not received a copy? If so you probably mailed the coupon in a hurry and forgot to fill it out. Will you please send the one at the bottom of this announcement, giving your name and address in full. The book will reach you promptly.

If you have never asked for a copy of "Progressive Cultivation" it is high time you did. From cover to cover it is filled with money saving, time saving information. It tells how and when to use dynamite for sub-soiling, tree planting, irrigation work, rock and stump blasting, drainage work, excavating, felling trees, and many other purposes.

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BUTTER.

Offerings continue fairly large, with little demand from outside markets, and fresh extras are running along at about the same level as last week, while the lower grades have eased off a little. Storage stock has been moving slowly, and there is a heavy stock on hand; but the cutting off of Australian supplies will probably enable holders to dispose of their stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	30½	30½	30	..	30
Prime	27	27	27	27	..	27
Firsts	26	26	26	26	..	26

EGGS.

Values show some slight fluctuations, but on the average the level continues about the same as last week. Pullets have dropped back from last week's advance.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	52½	52½	51	51	..	52
Selected Pullets	45	40	41½	41½	..	42½

CHEESE.

Flats are offered more freely this week, causing quite a sharp drop in the price. Y. A.'s are steadily held, while Monterey cheese is one-half cent lower.

Fancy California Flats, per lb.	17 c
New Young American, fancy,	16½c
Monterey Cheese	15@16c

Los Angeles dairy prices.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	30	29	29	30	..	30
Eggs	42	42	42	42	..	40
Cal. Cheese	14	14	14	14	..	14
Flats	14½	14½	14½	14½	..	14½

DECIDUOUS FRUITS.

There is nothing new in the apple market, which is in very poor shape, with a very large supply in storage and little shipping demand. There is some export business, but not enough to affect the market; and it is said that some of last year's crop still remains in local ice houses. Pears are moving in a limited way at the former prices. Receipts of figs are steadily decreasing, though prices are lower than last week. Watermelons are about out of the market, and the cantaloupe season is nearing an end, though there is still a fair supply of the latter. Most offerings of grapes have been of unattractive quality, but the few choice lots appearing find ready sale at slightly higher prices. Strawberries and raspberries are higher, with diminishing supplies, and the late variety of cranberries brings an advance.

Cranberries, bbl.	$7.00@ 8.25
Huckleberries, lb.	6@ 8c
Strawberries, chest	5.00@ 8.00
Raspberries, chest	6.00@ 8.00
Apples, Newtown Pippin	50@ 90c
Belleflowers	40@ 65c
Spitzenberg	50@ 90c
Gravenstein	50@ 1.00
Pearmain	50@ 65c
Jonathan	40@ 75c
Crabapples	25@ 50c
Quinces, box	30@ 50c
Pears, box:	
Winter Nellis	1.25@ 1.50
No. 2	50@ 70c
Other varieties	35@ 75c
Figs: Black, double layer	1.00@ 1.25
Pomegranates, box	50@ 1.00
Persimmons, box	75@ 1.25
Cantaloupes, crate	1.00@ 1.25
Grapes: Malagas, crate	75@ 1.00
Tokays, crate	45@ 50c
Black	50@ 75c
Cornichon	50@ 60c

DRIED FRUITS.

There is a fairly large shipping movement, but this is mostly on old orders and current business remains quiet in nearly all lines, though values are fairly well maintained. In some quarters there has

been some pressure to sell, due to the financial needs of holders, but it would seem that the market should recover from the present dullness if given time. Some packers point out that, in peaches and prunes, shipments this fall have been almost equal to those of last year, and consist moreover almost entirely of new goods; while the eastern trade is not heavily supplied. Buyers, however, are quite generally working on a hand-to-mouth basis in all lines, with indications that they will continue to do so; and while the total requirements should be fully normal, most of the stock will be left at primary points until needed. The offerings of French prunes in the east appear to have had comparatively little effect on the market. The New York Journal of Commerce says: Although the demand for forward shipments is light from this quarter, holders of stock on the Coast are not inclined to shade prices. Most of the large jobbers have covered their early fall requirements and are waiting for the arrival of purchased goods via the Panama Canal. The quantity to come forward is said to be large, but no doubt is felt that it can be taken care of without appreciably affecting spot market values when the winter consuming demand sets in. In spot Prunes trade is improving on jobbing orders owing to more propitious weather conditions, but at the best the movement is slow, and the quotations on spot goods are nominal. California Raisins get little attention from local jobbers at present. A considerable amount of business for October shipping from the Coast has been done at the guaranteed prices of the association, but it is said that local distributors have by no means covered their requirements for the winter trade. Prices are firm and unchanged on the Coast, but there seems to be some pressure to dispose of spot goods, and as a result concessions in prices are reported to be making in some quarters. Peaches and apricots for shipment from the Coast are steady but quiet so far as home trade is concerned. More export business to the Continent of Europe by way of Copenhagen, Denmark, and Holland is being done.

Evap, Apples, 1914....	4 @5 c
Apricots, 1914	6 @9 c
Figs: White, 1914.....	4 c
Black	2½ @2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, 1914	4 @4½c
Peaches, new	3½ @4 c
Pears	6 @8 c
Raisins (in sweatbox):	
Loose Muscatels	4 @4½c
Seedless Sultanas	5 c

CITRUS FRUITS.

The citrus selling season of 1913-14 closed Nov. 1st, with good prices paid for oranges and lemons. Total shipments for the year from Southern California were 39,024 cars of oranges and 2,954 cars of lemons, which was the largest tonnage ever sent from the State. The lemon shipments were not up to the total of 1912, showing that the frost damage of last year had not been fully repaired. On the New York auction Monday, Nov. 2nd, Valencia oranges averaged from $2.60 to $4.30 per box, lemons brought $4.10 to $4.60 per box. The various other auction points showed about the same prices and markets were strong, which doubtless means that the balance of the old crop will bring good prices. New crop navel oranges will commence moving in a few days. In San Francisco offerings of grapefruit are increasing a little, and the top figure has been shaded. Limes also are slightly easier. Oranges are in very moderate supply, and values are holding up steadily.

Oranges:	
Valencias, box	$2.25@3.00
Tangerines, crate	75c@1.25
Grapefruit, seedless, box	1.75@2.50
Lemons, box	2.00@4.50
Lemonettes, box	1.00@2.00
Limes, case	3.00@5.00

NUTS.

Walnuts are said to be pretty well out of first hands, and it is not believed that later importations will greatly affect the market for California stock. Almonds are quiet, and small holders show considerable anxiety to sell, while buyers will take no interest except at considerably less than Association prices.

(Association Prices.)

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
No. 1 Hardshell	Nominal
Budded	20 c
No. 2	12 c

HONEY.

The demand for comb honey is ilmited, and it is difficult to find a market for all that is offered from the country. There is practically no market here for extracted, though most offerings are held at about the prices quoted.

Comb: White	11 @13 c
Amber	7 @10 c
Dark	6 @ 7 c
Extracted: White	7 @ 8 c
Amber	4½ @ 6 c
Off grades	3 @ 4 c

BEESWAX.

While there is no urgent demand, there is some business being done at the range quoted.

Light	31 @32½c
Dark	27½ @31 c

HOPS.

The market remains very dull, and little more than nominal as to values. The English crop has been very large, and shipments from that country are being offered on the Atlantic coast, cutting off an important outlet for Pacific Coast stock, while interior brewers are holding off. A few recent sales are reported in Oregon, however, as high as 11c.

1914 crop	8 @10 c

WOOL.

Wool continues nominal as local buyers are still holding off, and there is very little demand in consuming markets. A small sale at Cloverdale is reported at 10c. There seems to be no certainty at present as to the effect of shutting off the imports from England and Australia.

Fall clip	Nominal

LIVE STOCK.

Hogs continue to come in freely, and show a further decline. Other lines are firmly held, with limited offerings from nearby points.

Steers: No. 1	6¾ @ 7 c
No. 2	6½ @ 6¾c
Cows and Heifers: No. 1	5¾ @ 6 c
No. 2	5¼ @ 5½c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½ @ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
250 to 300 lbs	7 c
125 to 250 lbs	7½c
Prime Wethers	5½ @ 6 c
Ewes	5 @ 5½c
Milk Lambs	6¾ @ 7¼c

MULES

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

SPECIAL DECIDUOUS MARKET REPORT.

By J. L. Nagel.

Due to the arrival the past week of sound and unsound grapes, the market has fluctuated with considerable uncertainty, but, as the majority of the offerings appear to have been rain-damaged, the prices have not ruled very satisfactory. This recent rain has so affected Tokays that practically all of the crop will be sent to the wineries..

With the exception of a few cars of second-crop Malagas, there is nothing left to be shipped except Red Emperors from the Fresno District and a few Black Emperors from the upper San Joaquin Valley. It is estimated that the total shipments from now on will not exceed 350 cars, which will all go forward within the next thirty days.

Increase Farm and Orchard Profits

GROW INOCULATED LEGUMES

Alfalfa, Clover, Vetch, Field Peas and Beans

Inoculate Forage, Cover and Green Manure Crops with

The Improved German Soil Inoculator, Nobbe-Hiltner Process

NITRAGIN

TRADE MARK REG'D DEC. 6, 1898 NO. 32212

PURE CULTURE

THE SIMPLEST SAFEST AND SUREST SYSTEM OF SOIL INOCULATION FOR ALL LEGUMES

"NITRAGIN" is the wonderful germ that unites with the legume root and draws from the air the precious *nitrogen*—necessary to *all* plant life, health and growth.

Failure to get a stand or a perfect "catch" is nearly always due to the absence or weakness of the nitrogen-gathering germ. "NITRAGIN" Pure Culture gives to your legumes *billions* of these active, vigorous germs; as a result the plants grow quickly and luxuriantly; they are big, strong, healthy, deep-rooted.

A legume inoculated with "NITRAGIN" Pure Culture is the best *shade or cover crop* because of the quick growth, vigor and luxuriance of plant, and because it is a *soil-enricher* instead of a *soil-robber*. It is the best green manure crop because of the immense quantity of new nitrogen it adds to the soil and the extra richness of the humus.

"NITRAGIN" Pure Culture is the *original*—discovered by Nobbe and Hiltner, famous German bacteriologists; it has been improved and perfected by twenty years of testing and proving. It comes to you in *granular* form, packed in ventilated tin cans. Easy to apply—ten minutes work—a boy can do it.

Alfalfa—You can't afford to risk failure on this wonder crop. For Alfalfa success, inoculate the seed with "NITRAGIN."

"NITRAGIN" invariably insures a perfect "catch," quick growth, enormous yield and extra food value.

Inoculate *all* legumes with "NITRAGIN" Pure Culture. A special strain for each legume—27 varieties.

Pure Culture inoculation is endorsed by Government authorities, state experiment stations, practical farmers, agricultural experts and soil culturists. Let us send you testimonials and other *proof*.

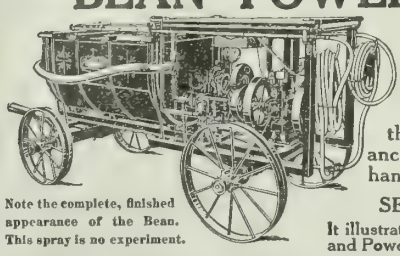
Price: Garden size $1.00 per can; acre size $2 per can; 5-acre size $9 per can. F. O. B. Postage and express extra. Parcel Post, 10c per acre extra. Ask your seedsman or fertilizer dealer for "NITRAGIN."

Prepared in the Laboratories of the German-American "NITRAGIN" Company, Milwaukee, Wis.

Guaranteed and Distributed by Armour Fertilizer Works Los Angeles, California

2

BEAN POWER SPRAYERS



—drive the material on at high pressure and have non-rusting ball valves, porcelain-lined cylinders, Bean patented pressure regulators and many other distinctive advantages. On account of their low-down, compact, perfectly balanced construction they are as easily handled on hilly ground as on the level.

Note the complete, finished appearance of the Bean. This spray is no experiment.

SEND FOR CATALOG 28-A

It illustrates and describes the entire Bean line of Hand and Power Sprayers and Pump Accessories. Send now.

BEAN SPRAY PUMP CO. 211 W. Julian St., also Cleveland, O.

The last of the pears have been shipped, most of them having been put into cold storage for sale later in the winter and spring.

The markets for the past week ranged as follows:

New York: .Tokays, 65c to $1.25; Cornichons, 70c to $1; Malagas, 75c to $1.05; W. Nellis, $1.80 to 2.08; Emperors 73c; Comice, $2.40; B. Hardy, $1.25; Morceau, Hf. Bxs., $1.09 to $2.19; Muscats, 80c; Pomegranates, $1.65; Late Red Plums, $1.50.

Chicago: Tokays, 55c to $1.25; Cornichons, 70c to $1.11; Malagas, 65c to $1; Emperors, 85c to 91c; Muscats, 78c; Pomegranates, 80c to $1.10; Morocco, $1.05.

Minneapolis: Tokays 65c to $1.15; Cornichons, $1.05 to $1.10; Malagas, 55c to 90c.

Boston: Tokays, 65c to $1.30; Cornichons, 80c to $1; Malagas, 65c to 90c.

Philadelphia: .Tokays, 55c to $1.20; Cornichons, 90c to $1.15; Malagas, 80c to $1.05; Emperors, 95c to $1.15.

Total shipments to date, 15,266 cars as against 12,741 last year.

Publisher's Department.

A subscriber writing us from Watsonville, says: "I want to say this for the Rural Press, it is absolutely the only agricultural journal I know of worthy of serious attention. The patch-work, shears editorial creations foisted on the farmers as agricultural are funny. I take them for the advertisements."

During the past week we have added 248 new subscribers to our list, and the field men all promise us big reports for next week.

Our advertising columns crowd the reading matter some this week, for which we are pleased, as we need the money. However, beginning week after next the Rural Press will contain 32 pages instead of 24, which will give ample room for reading matter as well as advertisements.

Remember the nights are growing longer and you will have time to read our two new books, "One Thousand Questions in Agriculture Answered," and "California Poultry Practice." Send for our special offer on either of these books.

This is Better
and Cheaper than you can mix yourself

It is almost impossible for any individual to mix together different kinds of chicken feed materials and get a perfectly balanced feed. And even if you did mix it properly it would cost you more than Surelay. Surelay is a by-product of the Sperry Flour and cereal mills, the largest on the Pacific Coast—that's the reason why Surelay is low priced. Try

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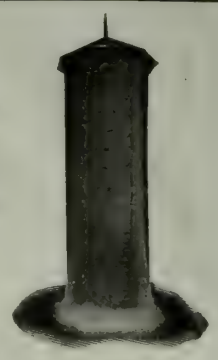
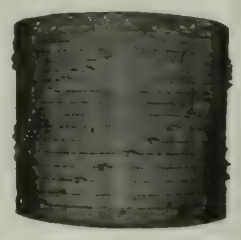


This is a Photo of the 12x36 Redwood Stave Silo manufactured and erected by us on University of California Experimental Farm, Davis.



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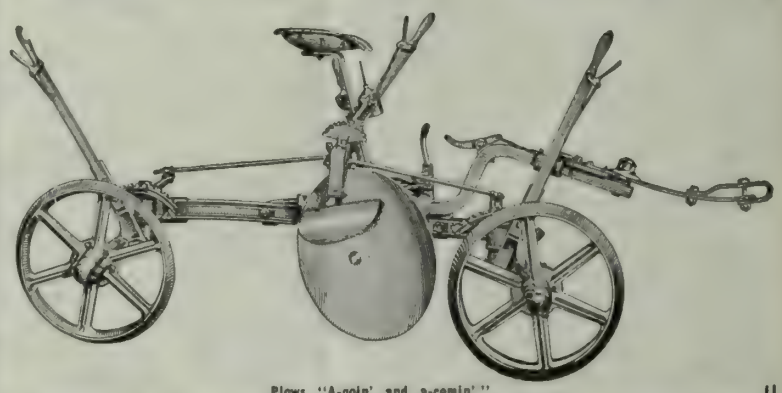

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Principle Right Construction Right Results Right Prices Right

The Benicia Reversible Disc Plow

WITH NEW PATENT ADJUSTABLE TONGUE is the most successful Reversible Disc Plow built. It is simple in design, FEW IN PARTS, and perfect in construction, and its durability is beyond question. It is easily operated on hillside or level land.

On Steep Hillside, where a team can walk and draw a plow, it works perfectly.

WE GUARANTEE OUR REVERSIBLE DISC PLOW TO DO GOOD WORK, not only in dry, hard and sticky ground, but to do good work in any fallow ground either clean or trashy, on hillside or level; in short, to do good work anywhere, except in sod land, at any time when plowing can be done. This is making a large claim for this plow but by actual use and tests it has proved to be the ideal plow to meet these conditions.

AS A DEEP TILLER it is an unqualified success. Bear in mind, this Plow is not necessarily for use on hillsides only; it is the best Single Sulky Plow for general use made today.

Baker & Hamilton
San Francisco Los Angeles

Vol. LXXXVIII—20 Forty-Fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, November 14, 1914 LOS ANGELES

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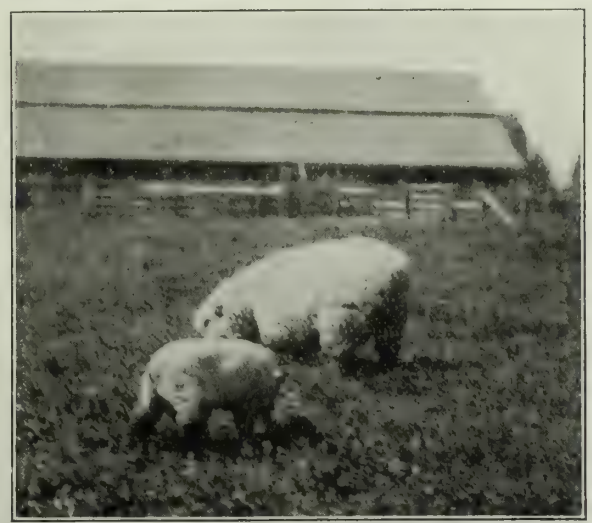
Growing the Easter Lamb

[Written for the PACIFIC RURAL PRESS.]

With a net difference of one, and quite often, during the past season, two cents a pound in their favor, it is the most natural thing in the world that progressive sheep men should aspire to the marketing of winter lambs, on the crest of the high Easter market.

The accomplishment of this desire, however, is a matter which few of our California sheep growers have as yet attempted, primarily due to the difficulty in overcoming the breeding disadvantages which are encountered by the winter lamb grower.

While these have not all been satisfactorily worked out on the Stanford University ranch at Vina, Tehama county, the Easter lamb has been a reality there for the past two years, with most gratifying financial returns.



Winter Lambs Need Protection, Shown in the Lower Picture, as Against the Usual Lambing Conditions Shown in the Upper Picture.

Breeding.—This feature of the ranch has indeed come into such popular favor with manager W. G. Stimmel, that 2500 ewes have been bred to start lambing by the first of December, this year, and but for the fact that the Merino base must be maintained in the range ewes, possibly still more would have been bred in a similar manner.

As the sheep are run on the mountain ranges in the summer months and on lower ranges during the winter, it is necessary to keep the foundation ewes on a Merino base, to secure the vigor and strength which experience has taught can not be secured otherwise.

The ewes are bred to lamb as two year olds and are kept in the flocks till their bags or teeth get bad, or they become in other ways disqualified for breeding purposes.

Pure-bred Rambouillet bucks are used, performing their first service as long yearlings, on all of the ewes except those bred for winter lambing, these latter being bred to Shropshire bucks to impart the quick-growing mutton characteristics which are essential in winter lamb production.

This outbreeding to Shropshire bucks, if continually practiced, makes impossible the reserving of the best ewe lambs for later range breeding, when their early development would otherwise make them most desirable for such purposes.

Shelter.—Coming as they do with the beginning of winter lambing sheds have to be provided. Three such buildings have been erected on the ranch having a capacity of between 400 and 500 ewes each, which is further supplemented by other farm buildings, making it possible to accommodate about 2,000 head in all.

These buildings have been covered with galvanized iron roofs, supported underneath by strong posts, set eight feet apart. Division of the floor space into large or small pens, as the occasion may demand, is achieved by the use of panels, three feet high and eight feet long, which are securely fastened to the posts with wire.

If the weather is bad, small amounts of alfalfa hay are carried to the sheep in the day time and they are fed and kept under roof. As soon as a ewe drops her lamb and properly owns and cares for it, they are turned out to provide room for other drop bands. This is usually done about four days after lambing, depending to a large extent upon how fast the lambs are coming. When coming slowly they are sometimes housed for a week at nights, but turned out during the day, weather being favorable.

"I am willing to use hot-house methods with the market stuff, but not with my breeding stock," was the remark of Mr. Stimmel in explaining why the ewes are pushed into the open as soon as practicable.

When the weather continues to be bad, as was the case last year for seven weeks, the ewes with their lambs, are driven to points on the ranch having a heavy growth of timber or to other protected places.

From the time that they are turned out of the lambing sheds until marketed, their growth is greatly dependent upon good feed, and when one considers that last year's lambs weighed 65 to 75 pounds at three months old, and sold for an average price of $4 a head, it is evident that lambs on this ranch never go hungry.

The value of this system is further augmented in the relatively high percentage of lambs raised, last year's operations showing that 95 per cent of all lambs dropped were marketed, and had the work been carried out in a smaller manner it is likely that this percentage would have been still greater.

The Glide Way.—Another illustration of winter lamb raising, carried on in a somewhat different, but at the same time profitable manner, is practiced by T. S. Glide, on his ranch in Yolo county.

In running his several thousand head of Merino sheep, there are each year a large number of old ewes which, due to poor bags, backs, or teeth, are unfitted for future range breeding, and which were in past years marketed from the range in the fall, at a low price, due to their poor physical condition. These, together with the yearling ewes, which prove to be poor breeders or for other reason undesirable to carry in the bands, are bred to Shropshire bucks during the summer months to lamb the latter part of November and the first part of December.

At lambing time the sheep are given practically the same care as on the Vina ranch, except that in this case only one lambing

(Continued on page 480.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

Address all communications and make checks or money orders payable to
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Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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R. E. Hodges } - - - - Assistant Editors
J. C. Loomis }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., November 11, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka.....	.44	6.25	5.20	66o	44o
Red Bluff...	.00	1.56	3.19	78	46
Sacramento.	.04	1.08	1.84	76	48
S. Francisco	.00	.47	2.05	78	54
San Jose...	.02	.98	1.56	78	40
Fresno.....	.00	.58	1.14	84	48
Indep'ndence	.03	.40	1.09	72	36
S. L. Obispo.	.02	.20	2.12	88	44
Los Angeles.	.18	.49	1.07	90	54
San Diego..	.87	1.90	.74	88	60

The Week.

Our readers hardly need to be told that the election is over. Probably some of them were imprisoned for several days and nights in the vote-counting places and had a more realizing sense than the rest of us of what the present California system of lifting yourself to a place on the ticket and of getting your peculiar ideas into the form of homemade legislation, really means. Some of us will also be figuring up what it costs in taxes to defeat persons and propositions which most of the people have no public use for. But all that is not our problem: the next legislature will probably have a good deal to do with it. The chief joy which we see at the moment in the last campaign and its outcome is that the decisions reached by the voters were not hair-splitting: they declared loudly and unequivocally whom they wanted for rulers and representatives and what they wanted in laws. As the American system calls for good losers as well as joyful winners, and enjoins upon all the honest belief that the country is safe anyway, it is fortunate that pluralities and majorities were so large that there can be no doubt of the popular will. Therefore, it becomes incumbent upon all to forget recent asperities and rise bouyantly to efforts for state development and the individual prosperity of all who are working fairly toward honorable and enterprising production. On our own part we propose to practice what we preach. Our next issue will appear with a 33 per-cent increase in pages and with contents more pointedly and amply directed toward helping our readers to get busy in lines which lead still farther onward in agricultural efforts which are rapidly giving California leadership among the states of the Union.

Is It Not a Joyful Place to Work?

We apprehend that those who become Californians soon forget to be appreciatively thankful for the delights of their environment for life and work. It all comes to be too much a matter of course with us to evoke frequent remark, and yet we should never forget what we are enjoying. If the distant reader desires suggestion of what it is, let him examine the temperature columns in the Weather Bureau report upon this page and contrast the figures with those of his own locality. Let him then interpret our figures into realizable terms of plant growth. We were scudding over a thousand miles of California coast valleys since our last issue and caught the scarlets and crimsons of ripening peppers and tomatoes and the purples of egg plants through the thick verdure of foliage untouched by frost; we saw also hay-making in alfalfa fields while in house gardens callas, heliotropes, etc., were still carrying midsummer to the verge of Thanksgiving Day. These plants are cited because they are the ones which are condemned as "tender" in the floral language of the temperate zone, and they will bring to the distant reader a keener appreciation of our conditions than descriptive words could convey. Of course here and there, in low places and on the mountains, they have closed their seasonal careers, but over the great stretches of valley mesas and foothills and, measurably, over the almost illimitable plains, they throw their rare beauty to the eye in earnest protest against the desolate November which the poets have sung for other lands.

And there is another blessing which we are apt to overlook as we glance across our rural landscapes, and that is the blessing of peace. Californians need to be reminded that their conflicts at the ballot-box do not work such havoc as this, from the war-zone of Europe:

"Trenches, pits, dugouts, embankments and mounds are everywhere. Scattered over the fields are remains of property of every description. Rarely can a sound tree be found, practically all bearing the sign of shrapnel and other shell fire. Houses and huts are in various states of ruin and the fields littered with the wreck of transport trains, wagons, harness and remnants of barricades, and the countryside reminds one of a district ravaged by a cyclone."

Surely Thanksgiving Day is a fit token for our November!

What the Canal Is Doing for the Coast.

And there is another thankful note which should be sounded, but which California has to enjoy by proxy until the state returns to wheat surpluses, as she should. This week the declaration comes from both Portland and Seattle that shipments are being made to Europe which would have been impossible had it been necessary to route grain vessels via Cape Horn, with attendant risks of capture in southern waters by hostile warships. Within the four months of the grain exporting season already past, Portland exported 2,593,632 bushels of wheat valued at $2,612,125, and last year the same months are credited with 2,667,480 bushels, but valued at only $2,198,039. The advance in the prices is responsible for the increased value of grain exports. From Seattle emphasis is laid upon the fact that the opening of the Panama canal has more than doubled the water traffic between Puget Sound and Atlantic coast ports, but the increase would have been vastly greater but for the war. For example, the Southern states are not taking canned salmon as usual, owing to the cotton depression. Thus it clearly appears that the canal is serving prosperity on this coast—not so notably as it would had the high seas been unvexed by cruisers, but still it has largely saved our trade because it enables cargoes to traverse waters whose tranquillity it is possible to guard and assure. And of course shipments from San Francisco, though covering other products, impress the same significance.

Cotton and Wool.

These two great textiles are still in the lime-light though with quite different aspects. The worse phase of the cotton disaster seems to be this: Cotton prices of November 1st averaged 6.3 cents per pound, while a year ago the price was 13 cents. This reduction represents a total shrinkage of income of cotton farmers for lint cotton of about $425,000,000. Cottonseed was sold by producers on October 1st at about $15.25 a ton, while a year ago the price was about $22 a ton. This reduction represents a shrinkage of about $30,000,000. But this is a spot loss and on paper only because the outlook is that it will be easier either to carry or to sell cotton and thus ultimately to realize something more from it. The English spinners are getting busy and have plenty of orders to fill for China and India, and the reopening of the Manchester cotton market results from the assurance of the spinners that "the improvement in the cotton situation was largely due to Sir George Paish's efforts in the United States, resulting in a better understanding between bankers, growers and brokers, and the British and American governments." This is an achievement in international peace and quite in contrast with the report, which comes from the continent, of the barbaric bitterness of the war. The French claim that the Germans are not only carrying away all the yarn, cotton, woolen and raw material from Lille, Roubaix and Tourcoing, now in their possession, but are making a practice of destroying all factories with machinery in them, so that this region of French textile industry will be crippled for years to come. This unpardonable war is therefore not a conflict of armies but of destruction and pillage which the world will not forget.

On the other hand, American wool will for a time forget the tariff-reform injury because England has covered for her own use all the Australian product and laid an embargo upon its shipment to this country. Perhaps our ruling statesmen may get a hint that to cover our own nakedness, it is not wise to court dependence upon other nations for our wool supply. No one could have foreseen so swift a rebuke to our existing impolicy!

Wine and Work.

The voters of California have overwhelmingly settled two agricultural things: One is endorsing the action of California pioneers, both Spanish and American, in choosing to employ the fullness of the grape for the upbuilding of the state. The other is the affirmation of the right of a man to buy or sell the

commodity known as labor as he may deem best for his own comfort and for the success of the production in which he may be engaged. So long as one did not really know the prevalent wish of the people on these subjects, prohibitory propositions were worth trying. As these propositions have been so strongly denied it becomes reformers to give attention to more reasonable, regulatory measures, which may be expected to more widely commend themselves to the people and to cure whatever evils exist in the social order. Industrially it is very timely and important that supplying the world-wide and race-long demand for wine should not be stricken from the resources of a state which is at most the only state in the nation having creation's cut of adaptations for the vinifera species, which is the only source of what the world calls real wine and not medicine. For half a century the state has been handicapped by popular preference and prejudice for the product of the same grape species for European countries, largely because of historic aspects of their output. Now the time comes for a fairer estimate and patronage for the California product. There has been a tremendous expenditure of time and money, under state encouragement, to qualify to meet the demand which has now arisen through the exigencies of war, and the people have voted that the enterprise of producing wine, which is perfectly legitimate and praiseworthy from a world's point of view, shall not be denied to the people of this state. There may be regulations, even to prohibition, wherever the people in its sovereign right decrees, but the right of Californians to drink wine, if they choose, in private places, and their right to grow grapes and manufacture the products thereof for the world's trade is overwhelmingly affirmed by popular vote.

Land for Our Own People.

We have refused printing to several good letters from our subscribers against wholesale importation of Belgians because it seems to us the proposition is a dead one; hardly needing post-mortem punishment. It died so soon that it may surely be credited with infantile innocence and set free to do its own harping. There was, however, one good and pertinent comment in all these waste-basketed letters and that may be mentioned. In effect it is covered by these questions: "Why are we so anxious to capture the simple-minded, but heroic, Belgians? Do we wish to give large land-owners a chance to skin them? If not, why do we not offer some such help in starting on land to our own landless people?" It seems to us that about all there is left of this Belgian incident is that, and the influence of it will be good for a long time. There are, doubtless, many good people in our towns and villages and there are many more now working for hire on farms who would do much better for themselves and for the state if they were enabled to become owners of land. Other nations are doing that sort of thing successfully. Both England and Germany were hot after it until they got hotter after each other. Now California has a good chance to show the other states and the world that she can do at least as well as the Australian states and the Canadian provinces are doing. We would not be a bit surprised if such an enterprise should take definite form very soon and be ready for the coming legislature. The people of California voted Governor Johnson up just as strongly as they voted other things down, and we have reason to believe that they approve him and expect from him things progressive in the popular interest. He has always shown keen interest in financing people on land so that they could earn and pay for the land and not lose all to exploiters. The Belgian incident has shown that there is plenty of land available for reasonable prices and in a way through which competent people can pay out. Therefore, our heart is a little tender toward the Belgian fiasco. Keep your garments on, friendly contributors; the game is not yet played out!

Queries and Replies

Querists must give name and address.

Peach-Grafting or Interplanting.

To the Editor: I have too many peach trees and want to graft them to almond trees. The peach trees are ten years old, in good shape; roots and trunks all right. Can they be grafted to almond scions with any degree of success so they will stick, grow and produce crops later? If so, when would be the proper time to graft, and any other information you would be pleased to give, or would it be better to plant young almond trees between the rows and let the peach trees grow for two years and then root them out? I can water the young trees in the rows if needed. The Queries and Replies in Pacific Rural Press are interesting and profitable.—J. W. M., Chico, Cal.

You can successfully graft over the peach trees this winter if you top the main branches above the forks and put in side-grafts without splitting the limb-ends and waxing extra well, for the peach bark shrinks and dies back badly if not covered. If you do this, let good shoots grow from all stubs on which the grafts do not take and bud into them near their bases in June. In this way you are likely to have every tree growing almond wood next summer.

But the objection to this is the fact that the amputations do not easily bark over on the peach and unless you watch and keep the ends painted the old wood will begin to decay and you may have a sad lot of rotten trunks below the thrifty almond branches, and this does not make for longevity. This outlook scares us because we have seen so many bad grafted-over peach trees and we incline to the planting of good yearling almond trees between the rows, cutting back the peaches to give the almonds plenty of light and getting a couple of good crops of large peaches on the cut-back trees. Then use water enough to keep both lines growing well. Of course, you will furrow out well and run a subsoiler along the line of the new rows so as to plant them in root-free ground, otherwise they will be hard to start.

Neither of these ways is very easy, because one requires you to be a very good grafter to catch well on the peach: the other will require special watching and pushing on the young trees. But both ways are possible.

Grain and Vetch Hay.

To the Editor: I have ten acres of land which has been cropped to grain for many years. I do not wish to let it lay idle this year, and have thought that I could sow it to either oats or barley and mix with the grain either a cowpea or a vetch. Would this be a good plan and which particular variety would you sow? When should the pea or vetch be sown in order that it may be cut for hay? How much of each should be sown?—J. G. R., Modesto.

Get in shape and sow the oats and barley and vetches, as soon as the land is wet deeply enough to keep them growing. Do not use cowpeas; they can only be grown in the frostless season; vetches will stand frost. Sow 30 pounds of the common or Oregon vetch and 60 pounds of barey or 40 pounds of brown or black oats which do not rust much. Sow both at the same time. This would give you an early crop of hay, but just when it will be ready depends upon the season. If you want a green crop for winter feeding use rye instead of the other grains.

Potatoes After Corn.

To the Editor: Please inform me what is the best method, and implement to use in clearing off standing corn stover? I have thirty-five acres of it. I do not desire to pasture the land as I wish to plant an early spring crop of potatoes, and I fear the fresh manure will cause disease. I also want to know what kind of a plow is the best to use for turning under old alfalfa preparatory to planting potatoes.—A Subscriber, Oakdale.

You can probably get all the coarse stuff free by rolling and disking more cheaply than in any other way, but we would not fear for potatoes the amount of well scattered manure that you will get from feeding down. We would put on a good bunch of stock and hurry it off so as to plow under the trash as soon as possible and plow again for potato planting. There may be some particularly good plow for turning under alfalfa, but we do not happen to know it. We have seen good work done with several kinds of steel plows. The main things are to keep the plow sharp and have a good team.

Stem-Cavity Injury to Winesaps.

To the Editor: I am sending one of my Stayman Winesap apples and if you will notice there are scabs around the stem. There are a great many that are cracked around the stem. Will you please tell me the cause of it and if there is any remedy? The trees are four years old.—P. W. Beaumont.

The trouble is not new, but cannot be satisfactorily accounted for. It is not any known disease. There is injury to the skin of the fruit under the russeting of the stem cavity, of which the result is formation of corky cells and this destroys the expanding power of the skin and causes cracking, as the fruit makes its final enlargement. Apparently, this injury is done while the fruit is small and it might be done by scarifying insects; by action of sun on moisture collecting in the cavity—possibly by dust-collection and interference with activities through the skin, but these are all conjectures and at this moment the trouble must be regarded as unexplained and no remedy can be indicated.

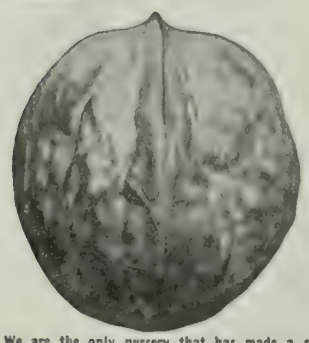
Planting for the Future.

To the Editor: I am planning to set out ten acres of trees on heavy black soil with the intention of selling after three or four years. Which of the following in your opinion will meet with the best demand: figs, almonds, or olives?—Reader, Merced.

We are sorry, but our prophetic mantle has slipped off. We would plant whatever the experience of older planters in the same soil has shown to be best. Almonds are not suited to a very heavy soil generally.

WALNUTS

Grafted and Top-Budded A Leading Specialty



We are the only nursery that has made a success of top-budding the walnut, and invite investigation. There is no finer stock in the State, and all of our stock is propagated from known bearing trees. Careful planters will take heed of this. Please write or call.

PEDIGREED FRENCH PRUNES Blenheim Apricots., Ornamental Stock in Pots. Landscape Gardening a Specialty.

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French and Imperial Prunes, Bartletts and other Pears; Tuscan and Phillips Clings, Fay Elbertas and other Peaches. Cherries, Plums, Apples, Grafted Walnuts, etc. Stock pure and of best strain. Place orders promptly. Prices reasonable.

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No Spike Roots.
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Dormant Spraying Begins.

While some of the articles below advocate immediate spraying for effectiveness, it may be well to send the pruners ahead of the spray machines. This will greatly reduce the surface to be covered and save material; it will open up the trees so the spray will cover the wood more effectively, and it will cover the spots most exposed to infection, namely, the fresh cut ends of branches. Then the pruners will not be rubbing off a lot of the spray, either.—Editor]

SPRAY PEACH BLIGHT NOW.

[Written for the PACIFIC RURAL PRESS.]

"Peach blight needs a fungicidal spray in November," says Nevada county horticultural commissioner, D. F. Norton. His colleague of Riverside adds that Bordeaux or lime sulfur can be sprayed on for peach blight at a cost of $8 per acre for the one, and $10 for the other. Why should it be sprayed on now?

It is due to a fungus which is becoming active now on the young wood and will continue active all winter. Olive-green or purplish spots will spread from the points where the spores have stuck and the twigs will be deprived of sap and die. When fruit spurs are infected, fruit may set in spring but is almost sure to drop. Where infection is close to a fruit bud, the bud is killed or so weakened that it will not mature.

To kill the fungus before it does the damage is the object of the Bordeaux spraying now. Lime sulfur in the spring before buds open will kill new infections and catch the twig borers or peach worms at the same time.

LIME-SULFUR ON PLUMS.

[Written for the PACIFIC RURAL PRESS.]

The great success of Jesse Aiken of Sacramento with Wickson plums will be noted in our columns later, with his methods. Just now is his time for spraying the trees with lime-salt-sulfur solution. Since his district is unusually free from plum disease, he doesn't spray every year, but did last November and will this month if he can get the machine. His father tried lime-sulfur when it was first proposed. It was thought that maybe codling moth would yield to this spray. It didn't, but when the father laid down his burdens, his son continued the use of lime-sulfur. "It's the greatest tree tonic I know," says Mr. Aiken. "It seems to make the trees more vigorous; it eats off the moss—the first time we got rid of the moss was a few years ago when we used lime-sulfur for that purpose. We don't have San Jose scale badly here but I keep my trees practically free from this pest with lime-sulfur, always using salt. The University seems to be dropping salt from their recommendations, but I intend to keep on using it."

The spray sticks onto the tree pretty well through the rains, but what washes off is good for the soil —sweetens it, and the sulfur kills diseases in the ground.

OILING APRICOT SCALE.

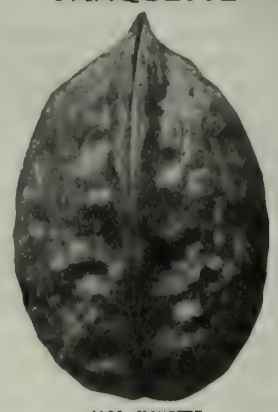
[Written for the PACIFIC RURAL PRESS.]

Brown apricot scales are moving from the leaves to wintering places on the twigs and are now ready to be killed by oil emulsions as recommended by the horticultural commissioners of Alameda, Colusa, Los Angeles, Mendocino, and Yolo counties, where enough infestation has been found to warrant active control. They attack apricots, peaches, prunes, plums, pears and cherries. F. C. Willson of Santa Clara county showed us last spring apricot twigs encrusted with the pests which do their damage, not so much by depriving the tree of its life sap, but by exuding honeydew all over the leaves and fruit and twigs. This honeydew is a most favorable breeding medium for the soot-fungus which discolors fruit to make it unmarketable, and covers a large part of the leaves so they cannot perform their function of elaborating sap. In Santa Clara valley they are usually fairly well controlled by a parasite, but certain years come when the parasites are not effective. Then the orchardist wishes he had sprayed them during the dormant season, as soon as possible after the leaves had fallen, or even before, so as to catch them at the most susceptible period when there was least foliage in the way of spray.

The scales are easily distinguished on their host trees as reddish brown, oval, shell-like bodies the largest of which are about three-sixteenths of an inch across.

While the Napa county horticultural commissioner reports the use of lime-sulfur, without stating the satisfaction gained, that spray is generally unsatisfactory. Oil emulsion once thoroughly applied in the dormant season gets practically all of these insects, probably because of

FANQUETTE



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greater penetrability. Of the oil emulsions recommended, either the crude oil or distillate is most favored. The crude oil emulsion is made by adding three gallons of liquid soap to 175 gallons of water, mixing it and adding 25 gallons of crude oil. This does not make a very stable emulsion and must be well agitated while being applied.

The stock distillate emulsion is made by dissolving 30 gallons of whale oil soap in 12 gallons of water, and adding 20 gallons of 28 degree distillate while the soap water is heating to the boiling point. It should be well mixed while adding the distillate. Dilute this in the ratio of 1 to 20 when needed for spraying. Commercial emulsions, when properly prepared may be as good.

OIL EMULSION TOO STRONG.

[Written for PACIFIC RURAL PRESS.]

An interesting effect of spraying prunes with crude oil was observed last September in the orchards of Will Weston in Santa Clara county. Using 40 gallons of crude oil per 200 gallons of water with whale oil soap, he sprayed his pears to stimulate them, a practice that has been found very effective and desirable. Having some spray material left over, he applied it to three or four rows of prunes. This was two or three weeks before they bloomed. The crop did not mature, though there was a good bloom. On the unsprayed five acres beside these rows, 17 tons of green prunes, averaging 60-70, were produced and sold at a 6c basis price.

The unsprayed fruit-bearing five acres, when observed in September, was black with the heavy, sooty mold growth on the leaves covered with honeydew excreted by myriads of scales. The few rows sprayed showed no soot, but the leaves were coloring and dropping. Neither section was healthy, but a spraying with a 12½ per cent emulsion instead of the 20 per cent strength would have cleaned off the scale without damaging the trees and preventing the crop.

SMELTER-FUMED ALMONDS.

To the Editor: My almond orchard is badly damaged from the smelter fumes and as the State is going to shut down this nuisance I would like to know if the trees could be saved by cutting back the worst injured trees to a height of about 4 or 5 feet and bud the shoots again. Have some 20 plum trees (yellow egg) that are badly damaged, also could I bud them into almonds? My orchard is eighteen years old and well cultivated. In this section we have no irrigation. What time is best to cut those trees back? At present I can see the injured parts best, and am tempted to cut them now, but fear I may do more harm than good.—H. T., Burson.

[Cut back the plum trees and graft as will be described in our issue of December 5. Almonds are top worked on prunes and presumably have affinity for Yellow Egg plums, though some varieties of plums are particular what they unite with. Also the almond is a free grower and sometimes overgrows the slower stock. If any of your grafts do not live, you can bud the new shoots that will come in the spring. Cut back your injured almond trees any time before spring, leaving those main limbs most likely to live and make a balanced tree. You won't need to bud them again unless you want to change the variety. Then do as advised for the plum trees.—Editor.]

AMES' PLAN ON PRUNES.

To the Editor: Twenty-nine years ago and for some years afterward, I pruned my father's 10-acre mixed orchard in Yolo county on the Sacramento river. I pruned five prune trees as Mr. Ames does his peaches. It proved a success. I saw the same trees three years ago and they were the best shaped trees in the orchard, no tall limbs.—C. E. Beck, Durham.

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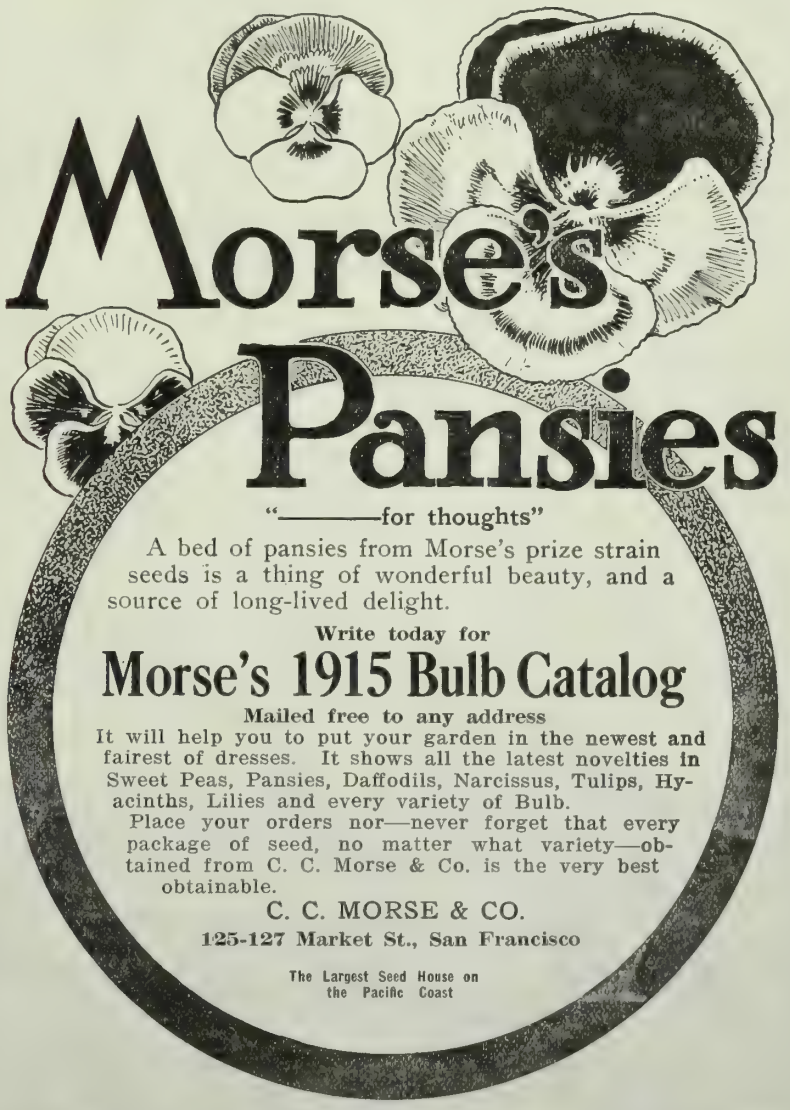

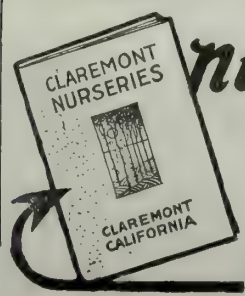

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Citrus Fertilizers.

[Written for the PACIFIC RURAL PRESS By J. E. Adamson, Pomona.]

The grower of fruit, or for that matter, of any other crop, who has satisfied himself as to the part played in the production of his crop by any of the several elements of plant food, is in a position to go into the market and intelligently bargain for the supply of fertilizer.

He should be able to make the best use of the money he has to spend and not only buy the right ration for his crop, but to buy it at the right price. Mixed goods may be the form in which he would rather handle his fertilizer, but he should not pay too much for the mixing.

If the trees show a tendency to scant or sickly growth and there is no question as to the quality and quantity of the water supply, it is safe to assume a shortage of the supply of nitrogen, and goods showing a high percentage of nitrogen should be bought.

Generally the tag on mixed fertilizer will state that the nitrogen is derived from several sources, as, for instance: nitrate of soda, blood, bone, tankage. The real reason for this mixture from several sources is to offer a fairly constant supply of nitrogen, due to the difference in the availability of the different goods. The same result can be obtained in the use of the simple unmixed forms, if due allowances are made for the availability of the different goods.

Sometimes trees will stand in apparent good health with the leaves a rich dark green, but with a scant crop of coarse large fruit. This is largely due to a lack of phosphoric acid in the tree, but may not be a sure sign there is a shortage in the soil, as the tree may lack the ability to get from the soil the needed supply, either from the supply not being in available form or through physical shortcomings in the tree itself.

Sometimes again, trees will be dark green and full of fruit, but of sizes too small for the market. If such trees had all the water they could use to good advantage, the chances are that they need a vigorous pruning. This latter condition is quite prevalent in the older Valencia groves, and some good examples have been presented of the value of pruning. The probability is that the wood of the trees has become mineralized to the extent that the free flow of sap is impeded, and no food can reach the leaves for the production of fruit and leaves to the extent that the fruit shall be large and otherwise desirable.

Generally speaking, however, if the crop is short in point of numbers of fruit, it is time to look at the phosphorus present in the soil.

As noted before in these papers, if there seems to be an ample supply of phosphorus present, there are ways to make it available, namely, manure, covercrop, or the application of lime or gypsum. Sometimes an orchard which has been treated regularly to applications of some form of commercial fertilizer, without a reasonable continuance of fertility, will change hands and the new owner, believing strongly in the efficiency of barnyard manure, will put on a liberal supply, and get returns far in excess of the value of the plant food present in the manure. Too much credit is liable to be given the manure, when as a matter of fact the principal work done by the manure was in the nature of releasing the plant food placed in the soil in unavailable form. We are all familiar with the picture of a man carrying the plant food in a basket, equal in quantity to that contained in a big load of manure. The value of manure as a humus maker is vastly greater than as a conveyer of plant food.

Next week we shall have more to say on fertilizers, taking up potash in the above manner.

It is estimated that 7,000 acres of chile peppers are planted in Orange and Los Angeles counties—double that of last year. The growers feel that the buyers are bearing the prices down and are talking strongly of organization.

Pour crude oil on the water in the hog wallow during the summer months and the lice problem will not be nearly so serious.

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We again solicit the fruit tree and vine orders of the planters of the West, knowing that nothing but the Best will satisfy the experienced buyer. Twenty-eight years of successful nursery business has proven the quality of

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and the treatment Kirkman accords his customers. Our steadily growing patronage has demanded that we grow more stock each year, until we now have more than five million trees and vines growing in our nursery plants in California and Arizona. A considerable portion of the stock in our nurseries, which will be ready for delivery this coming winter and spring, is already sold to early customers, but we still have a complete stock of all varieties of fruit trees and vines, as well as a general assortment of ORNAMENTAL and SHADE trees, etc, etc. What are you going to plant? We have it, without doubt, in large or small quantities. Illustrated price catalog on application. Please mention what varieties you are expecting to use.

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Fruit Association Hopeful.

Although dried fruit prices have been on an unsatisfactory basis the past season, the following communication from the California Cured Fruit Exchange indicates that better conditions are being expected. They say:

"Packing and shipping has been keeping everyone busy, so the volume of new business has been very small. The trade, generally, has been buying from hand to mouth, or only for their immediate requirements, so it is reasonable to suppose that they will commence buying earlier than usual this winter.

"Although buying has been very light, the market is in a depressed condition. Some difficulty has been experienced in filling prune orders on account of the scarcity of some of the smaller sizes, 60s to 90s being the scarce sizes in most districts, and even with this, the prune market has a very easy tone.

"It is expected that later England, and also other foreign countries will be in the market for dried fruit. Up to the present time a great deal of uncertainty has attended shipments to be made through their domains to Germany, and you know that Germany has been a very heavy buyer of California fruits, so the loss of her trade makes quite a difference in our home markets, as this forces goods that usually would have been sold abroad, onto our markets. We prefer to keep the fruit in our possession until such time as matters adjust themselves and shipments can be handled with a greater degree of protection to the shipper.

"The quality of apricots differs very materially in the different districts, which accounts for the range in prices. Buyers are showing very little interest in this article, so sales are slow.

"We believe that peaches have gone as low as they will go, and the low prices prevailing ought to stimulate consumption. The two grades of this variety which are shortest are Fancy and Extra Fancy.

"Packers and the buying trade were rather upset when we were advised of the slides which had occurred in the Panama Canal, as a great deal of fruit was in transit at that time, but the government, which is usually prepared for such emergencies, after a few days announced that the canal was again open for business We are liable from time to time to be subject to some small delays on account of the magnitude of the work and the possibility of there being some weak spot found in the construction.

"Raisins are being quoted by some at lower prices than the Associated Raisin company is making. We believe, a little later, when the rush is over, that the dried fruit market generally will settle down preparatory to the winter trade. We also believe that when the federal bank is open for business, which they say will be between Nov. 15 and 30, that we shall see things brighten up and that money conditions will be easier, but the effect of which will not be felt in buying until after the first of the year. Conditions which exist today have been helped along by the general feeling of pessimism and depression that exists, more than by actual conditions—everyone having made up their mind that times are bad, whether they are or not—so if everyone would look on the bright side of things and make up their mind that things are going to be all right, we would soon see a change, because the resources of this country are large. While we have a right to hope, let us not deceive ourselves into a belief that the high prices which prevailed for a short time at the opening of our season will return; there is nothing upon which to base that belief, we shall simply have a market—now there is none.

"It is only a temporary set-back, and business will soon be more flourishing than ever, and is already getting better, and the demand for our products will be much increased, so don't be discouraged—the sun is rising clear and the future will be bright."

The Southern Rice Growers' Ass'n of the Gulf States, organized to keep track of market and crop conditions throughout the world, is to send telegraphic market reports to the Butte County Rice Growers' Ass'n through the harvest season. Alkali land is being used in Tulare and Madera counties for rice, and good crops are being harvested from otherwise worthless land. Hard pan is said to be desirable—but Butte county farmers are finding that they must have good drainage.

Two hundred and twenty-five thousand bushels of club wheat were sold last Saturday by one man at Walla Walla, Washington, for $1.01½ f. o. b. Estimates are that 275,000 bushels more were sold in smaller lots the same day and the same place at about $1.00. Michigan farmers, organized into the Farmers' Society of Equity, whose headquarters are at Indianapolis, agreed to hold their wheat in July for better prices, which meant a dollar a bushel. It seems their goal was reached.

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WE OFFER YOU THE OPPORTUNITY.

EVERY man intends some day to own a piece of country land. Now is the time to get it and turn wheat, rice, beans, corn and other immediate crops into money, and plant trees for a permanent future.

OUR LAND IS CAPABLE OF ABUNDANT PRODUCTION.

WE ARE combining the water, seed, trees, implements, etc., with the land in such a way that any man who wants a farm finds his best opportunity here.

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AND THE income from it is sufficient for a good living and permanent saving. It can be cultivated by one team and a set of implements and irrigated from a single well. We offer good land—San Joaquin Loam—in the Sacramento Valley, near the eastern foothills in the TRUE THERMAL BELT.

The Price is $150 Per Acre.

(one-fourth cash, balance to be arranged)

This Price Includes

A MODERN PUMPING PLANT, completely equipped and installed: Water when you NEED IT.

TREES—a selection of almond, apricots, peaches, prunes, figs. Olive, lemon, orange and walnut trees for planting along roadways.

SEED—A selection of corn, beans, milo, alfalfa, rice and grain.

FARM IMPLEMENTS—A plow, a harrow and a cultivator.

THIS COMPLETELY EQUIPPED FARM places every buyer in a position to begin immediately and assures success from the start.

Farming is the Greatest American Industry and Today Scientific Farming Offers Supreme Business Opportunities.

REMEMBER THAT NOW—November and December—are the months to prepare the land for a full crop next year. We advise in planting and supply seed and trees best suited to the land. We will send a three months' subscription to the Pacific Rural Press without charge, to anyone in the East who is interested in owning a California farm.

Write for further particulars or call upon

Dudley Moulton

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Horticulturally Optimistic.

To the Editor: Time and science, when they work together, can do wonders. Not so very long ago, the orchardist who did not run his fruit trees up in the air about 3 or 4 feet, did not know anything about the business, and the orchardist who allowed a few weeds to grow between the rows was considered careless and slack about his work. But since those days there has been a revolt, and now if you want to be considered a crank, run your trees up and don't permit them to branch short of 3 or 4 feet, and don't allow vegetation to grow between the rows, to turn under later.

We are progressing. Evidently other changes will sooner or later be in order—to wit—Ed. Ames' method of pruning the peach, and Gerald Geraldson's philosophy of cultivation [as described in the Pacific Rural Press, page 592, May 24, 1913,] leaving a clover growth in alternate rows to be turned under alternate years.

It is gratifying to know that we have such wide-awake men. Temporarily—horticulturally—California is only in short skirts, and I would like to see what she looks like when she reaches her full stature.—G. P. Kelly, Edgewood.

BORDEAUX FOR CELERY.

[Written for the PACIFIC RURAL PRESS.]

Celery blight has shown itself very destructive. In the Orange county district it was a long time before they knew what to do. They learned that application of Bordeaux mixture from September once a month till the first rains, and as often afterward as possible, usually at 3-week intervals, would insure blight-free celery. Space large enough for a microscopic fungus spore to stick is enough to set up the disease. For this reason, the surface of new leaves and stalks must be sprayed with such a fine mist that the surface will be entirely covered, but not so heavily that drops of spray will run together and roll off. To get both sides of the plant after it is a foot tall spray the whole piece, then come back to the first row and begin at the opposite end from the starting point. By this time the first application will be dry enough so the second won't form drops and roll off.

To get the fine mist required, use high pressure and fine nozzles. Two hundred pounds pressure is the least that should be allowed while spraying. Orange county people have gas engines to keep up the pressure and spray four to eight rows at once—usually six. On plants over a foot tall, it requires about 100 gallons per acre.

An added reason for power outfits and careful spraying is that when low pressure is used the mist is too coarse and the drops run together and down between the stalks. This makes a poison food which will get the grower into trouble with the government and will get the consumer into trouble with his stomach. Such a condition is indicated by the greenish appearance due to the copper-stained lime of the Bordeaux. Not all housewives are careful enough about washing their celery. Even the stained celery is tolerably safe, however, if thoroughly cleaned.

TULE TREE PROTECTORS.

[Written for the Pacific Rural Press.]

Here is an opportunity for folks in the tule countries to make some ready money without much capital. H. E. Butler of Penryn used to buy tule tree protectors in San Francisco, but since two years ago couldn't get them any more.

"I like the tule tree protectors vastly better than any other, as they are soft, large enough and do not crack open or get knocked off. Have had them on till the tree trunk actually was bound. We bought the 9x12 size at about 2½ cents," says he.

Just gather the tules and dry them into 12 or 16 inch lengths, run a jute string through them two or three inches from each end, using a coarse needle and leaving two-thirds or three-fourths of the tule to go on the side next to the tree. Leave them loose enough to bend around the tree and leave ends on the strings enough to tie them. If you want to do a still better job weave jute cords back and forth between the tules for added strength, though we think this is scarcely necessary. Communicate with Mr. Butler and run a classified ad. in Pacific Rural Press.

CANADA PEAS AND PUMPKIN BUGS.

To the Editor: Can I raise Canada peas in this district, and how; also a means of destroying the so-called "pumpkin bug."—J. C. C., Turlock.

[You can grow Canada peas as a winter crop for forage, or you can start about February and make a seed crop in the early summer. Field peas do not like dry heat and therefore should be finished off before the dry season advances too far. For forage they may be broadcasted on the hard land and covered with a shallow plowing. For seed the land should be well tilled first and the seed drilled in rows about two and a half feet apart to allow cultivation until the vines reach out too far.

We do not know any good way with pumpkin bugs except catching and smashing—beginning as soon as you see the first one and keeping at it.—Editor.]

A carload of 30 tons of sugar cane has been shipped into Tulare county by the San Joaquin Valley Sugar Co. to be planted in small lots by farmers who are willing to experiment. The canes are covered in the ground and will send up plants from every joint.

Wilson Trees Recognized the Standard

West of the Rocky Mountains.

Mr. F. H. Wilson, President of the Fresno Nursery Co., has had 25 years' experience in the Propagating Department of the Nursery Business. All our propagating wood and cuttings to produce our trees and grape vines are gathered from Established Orchards and Vineyards under his personal supervision.

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Deciduous Fruit Trees, Citrus Trees, Olive Trees, Fig Trees, Grape Vines, Hardy Ornamentals,

well grown and otherwise first class, write us.

Our New Catalog is the talk of the Pacific Coast. This Book gives descriptions of all commercial varieties of Nursery-stock and in addition it contains valuable Planting Methods and other expert advice. Send for it. It's Free for the Asking. Submit a list of your wants for quotations. Special prices named on large orders.

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Burr Clover Seed

Write for prices and samples

CALIFORNIA SEED CO.

151 MARKET STREET SAN FRANCISCO

Maxwell's Nurseries, Napa, Cal.

Now booking orders for all varieties of nursery stock for next season's delivery

French, Imperial, Sugar and Standard Prunes on All Roots. Apricots, Bartlett Pear, Cherry, Peach, Apple, Etc.

FIRST CLASS STOCK TRUE TO NAME.

TREES TRUE TO NAME. SILVA-BERGTHOLDT CO. PLACER NURSERIES

Clingstone Peach Trees

TUSCAN! Ours are the improved Round Tuscans—firmer, more symmetrical and uniform, Finer Grained, less submitted Wind-Fall and Split-pit, and preferred by canners to the oblong Tuscans commonly propagated.

PHILLIPS! We cut our buds from a block of trees that have proven an exceptionally good strain of this variety. Fruit trees are always a safe investment—the demand is large, the price firm, and the profit good. What more can you ask?

THE SILVA-BERGTHOLDT CO., "Fruit Tree Specialists," P. O. Box B Newcastle, Cal.

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Germain Established 1871
SEED & PLANT CO.
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LOS ANGELES. CALIFORNIA

1914—15

Dutch Bulbs

Our 1914 Importation of Bulbs from Holland has just
ARRIVED
Buy early to get varieties.
Bulb and Fall Planting
CATALOGUE
free on request.
For better service please address Dept. O.

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Plant Pears for profit. California Bartlett ripen earlier than Eastern and Northwestern grown pears. During their season they monopolize the markets of the United States and Canada.

Silva-Bergtholdt's
FOOT-HILL GROWN
PEAR TREES

have strong, hardy root systems, the foundation of all successful trees.

We have a fine block of Bartlett, Comice, Winter Nelis, Anjou and other varieties. Our buds are cut from selected parent trees.
THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
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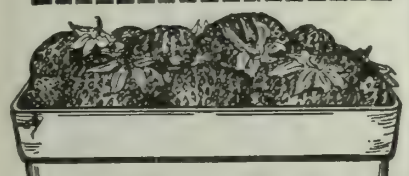

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Big bearers, all known producing varieties, only true and tried plants sold. Millions of plants, years of success, large, firm, juicy fruit; every plant guaranteed. Big yields, bear until stopped by freezing.
NEW CATALOGUE FREE
J. A. Bauer Judsonia, Ark.,
Strawberry Specialist--Estab. 1880.

Scalefoe Kills
Scale on Trees, Shrubs and Bushes
also
The Red Spider and other Insects, Worms and Bugs
Does Not Hurt the Plant or Tree
Quart, 20 cts. 2 Quart, 35 cts.
Gallon, 50 cts.
5-Gallon Can $2.00, freight paid
Special prices by the barrel.
Correspondence solicited
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IRIS

Price list, describing over 200 species and varieties, mailed free upon request. Upon receipt of 15c in stamps, we will mail you copy of our new Illustrated Catalog. Color plate alone is worth the price.
THE DEAN IRIS GARDENS,
Moneta, California

MORE BUCKWHEAT NEEDED.

To the Editor: We notice in your issue of October 31, an answer to an inquiry from W. J. P.., Isleton, regarding the growing of buckwheat and demand for it in California, and the price paid for it in the East. Owing to the small amount of buckwheat raised on this coast mills have been forced to buy buckwheat mostly from Japan, or else buy their buckwheat flour from the Eastern states.

In either case California produces only 15 per cent of the buckwheat consumed here, the balance coming from outside territory. The prices paid for California buckwheat for the past few years have been from $1.85 to $2.50 per hundred pounds, and the value is based on what buckwheat flour would cost milled and delivered here from the East.

The demand in California for buckwheat is steadily increasing, owing to the influx of Eastern people, and a good yield and quality of buckwheat could be raised here with only part of the care and attention by growers in other localities where this grain is grown successfully.

Buckwheat can be grown in California on irrigated land or on river bottom land of either peat or sediment formation and requires only sufficient moisture to germinate the seed and give the plant start enough so the roots can follow the moisture down. It matures quickly and when sown in July is ripe before any frost could damage it to any extent.

The harvesting is accomplished best by the old-fashioned reaper. In picking up the piles after they are dry, care should be taken not to get any dirt mixed with it as this lessens the quality of the grain if required for manufacturing purposes.

We are writing you for the reason that it has been extremely hard to buy local buckwheat in California for milling purposes, and locally grown buckwheat has always brought the top price for the reason that most millers would rather mill their own buckwheat flour as well as all other manufactured articles which they self.—Sperry Flour Co., Stockton.

VALUE OF SWEET POTATOES.

To the Editor: Kindly state the feeding value of sweet potatoes for milk cows, when fed in conjunction with alfalfa. Price is no object as I have plenty of both.—J. S. D., Merced, California.

[Three pounds of sweet potatoes contain almost as much dry matter and starchy feed components as one pound of Indian corn or barley. Under the conditions stated, they will make a valuable feed for dairy cows and are preferably fed sliced in quantities of 20 to 30 pounds per head daily. Sweet potatoes are rich in sugar and starch and are low in flesh-forming substances (protein); for this reason they are especially good supplementary feeds to be given with a high-protein feed like alfalfa.]

Mark your unprofitable trees now before you forget which are not bearing right. If they are a poor variety, you can top-work them later, or pull them out if they are too old or diseased.

Don't allow the soil to stay wet. Roots can't grow where water between soil grains excludes air.

ARMSTRONG NURSERIES ONTARIO, CAL. TRIED TRUE TREES

Largest and most complete Nurseries in So. California

OLIVES

Write now for FREE copy of our combined Catalog, Planter's Guide and Price List. Everything to plant.

IF YOU ARE PLANNING TO PLANT OLIVE TREES YOU CANNOT AFFORD TO PLACE YOUR ORDER FOR TREES UNTIL YOU GET OUR PRICES, AND IF STRICTLY FIRST CLASS STOCK, TOGETHER WITH ATTRACTIVE PRICES WILL OBTAIN YOUR ORDER, WE WILL GET IT. WRITE FOR PRICES NOW.

Fruit trees of every sort. Write us your requirements, and we will quote you attractive prices.

Armstrong Nurseries
John S. Armstrong, Propr.
ONTARIO CALIFORNIA

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It pays to be particular when you are purchasing. All the stock we offer for sale has been grown on fields personally inspected by us before they were harvested. We do not grow, nor do we deal in any other kind of seed. Our whole time and attention is devoted to the Alfalfa Seed game.

We can, and do, offer California's best product.

Samples, Prices and any information you may desire will be furnished on request.

V. A. PETERSON ALFALFA SEED CO., Arbuckle, Calif.
The only exclusive Alfalfa Seed dealers in the West.

Fruit Trees
ELMER BROS. NURSERY
AT SAN JOSE, CALIF.
The nursery that helped to make Santa Clara Valley famous.
QUALITY IS OUR MOTTO
We propagate all kinds of fruit trees; also grow the best strain of the Franquette Walnut. We make the prices right. Send for our advance price list.

Ground Phosphate Rock
The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in ach four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500%. At Maryland Ex. Station $1.96½ gave $22.11—over 1000%. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $2.50 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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BERRIES AND SMALL FRUIT.
If planted now, you should derive good results
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The Rhubarb-Berry & Cactus Specialist.

Agricultural Review

CITRUS AND SEMI-TROPICAL.

In order to insure only good citrus fruits going east this year, growers in northern California have secured E. N. Chase, of the U. S. Department of Agriculture to make samples and determine when the fruit is fit to be shipped. It is probably well that such steps are being taken, as a late dispatch from Porterville states that the government is preparing to seize all shipments of immature fruit this year. If such steps were taken it would very likely give California oranges a severe set-back in the eastern markets on account of their questionable quality.

What is to be known as the Superior California Citrus Exchange was formed at a meeting held in Sacramento last week. It is the plan of the organization to market practically all of the oranges grown in northern California, using a well-known brand and enforcing a strict standardization system. Those districts represented were Orangevale, Fairoaks and Thermalito.

Rain and damp nights recently, have somewhat delayed the fumigation work being done by the McPherson Heights Citrus association in Orange county, but about 400 acres have already been finished. In view of the fact that cyanide may be advanced in price on account of the European war, growers are being advised to fumigate now before prices go up.

The olive pickling plants of Oroville report that olives are coming in freely and that the crop is seemingly larger this year than last, although they are running smaller in size than last year. While the European war has had no effect on the ripe olive markets as yet, it is feared that the financial depression in the east will curtail the demand somewhat.

The first actual work of inspecting oranges in Tulare county, under the terms of the newly adopted federal regulation as to maturity was started last week at Porterville. It has also been decided to place an inspector in Lindsay, Lemon Cove and Exeter sections.

Advices from Olinda, Shasta county, state that the olive crop there is fully 40 per cent larger than it was last year. Harvesting of Manzanillos has been finished and Missions are now being handled.

Two carloads of olives were shipped to Los Angeles from Oroville last week for pickling purposes.

DECIDUOUS FRUITS AND NUTS.

With the declaration of the French government that all nuts and fruits have been put under an embargo, Carlyle Thorpe, manager of the California Walnut Growers' Association, has announced that California walnuts will find a ready market at good prices, pointing out that the present French embargo leaves the United States with only 18,000,000 pounds of California walnuts, with which to offset the annual consumption of 50,000,000 pounds.

The Fourth Apple Annual which was held in Mendocino last week proved to be the most successful show of its kind ever held in that place and competent judges stated that it equalled those held at Sebastopol and Watsonville. A harvest annual would more appropriately describe the event as other products besides apples were exhibited and the town was turned over to a general fun-making carnival.

Sonoma county has announced her intention of giving dried fruit in the State-wide movement seeking aid for the Belgian relief fund. Several other counties have signified their intention of sending farm products as well as money, which is certainly a worthy move in face of the suffering that is being reported from the war zone.

T. H. Safford, of Sutter county, has contributed some of the largest quinces ever seen in that part of the State, to the Sutter county exhibit at the Panama-Pacific Exposition. The fruit weighs about a pound apiece and measures 12 inches in circumference.

The first carload of dried fruits to leave Hemet, Riverside county, for a European country this year, was shipped last week to Havre, France, by the Hemet Cured Fruit Association.

The apple shipping season has just closed at Beaumont, San Bernardino county, good prices having been received by the growers according to a report from that place.

GRAPES.

It is estimated by the leading fruit men of the Lodi section, that the 2,240 carloads of grapes that have been shipped from that point this year have brought an average price of $435 f. o. b. Lodi. If the late varieties do as well as expected it will bring the total amount received by growers close to a million dollars. Besides this probably 50 per cent of the crop grown was sold to the wineries.

Nearly 125 carloads of grapes were shipped to San Francisco this year from Yuba City, the grapes bringing from $10 to $20 per ton.

FIELD CROPS.

Rice growers in the Richvale district have been made defendants in a suit filed by farmers along Dry Creek who claim that the drainage waters from the defendants rice fields have seriously damaged their land. Drainage is badly needed in most all of the rice fields at this time, not only for the protection of adjoining lands where rice is not being grown, but also as a preventive measure against water grass which has become a serious menace in many fields. The horticultural commissioner of Yuba county has issued a warning against this pest, stating that unless immediate steps are taken much of the land now cultivated to rice will be useless for that purpose.

In order to facilitate cotton growers of Imperial valley in the handling of their crops this year, the banks of Los Angeles have joined in subscribing $500,000. This will raise the total sum furnished the

$200 to $300 an Acre From a Walnut Grove

in full bearing is not unusual and many groves are producing even more. There's money in Walnuts.

MAYETTE! True Wiltz Strain! For productiveness, freedom from blight, and wonderful Quality, the Wiltz strain of Walnuts has no equal in any other of the standard varieties. Late Bloomer.

FRANQUETTE! True Vrooman Strain! Next to the Wiltz Mayette, the best Walnut for Northern and Central California. Late Bloomer.

Our Scions of Franquette and Wiltz Mayette, cut by R. Wiltz, a pioneer Walnut grower, are not only absolutely true to the strain, but are from selected trees. They are the best.

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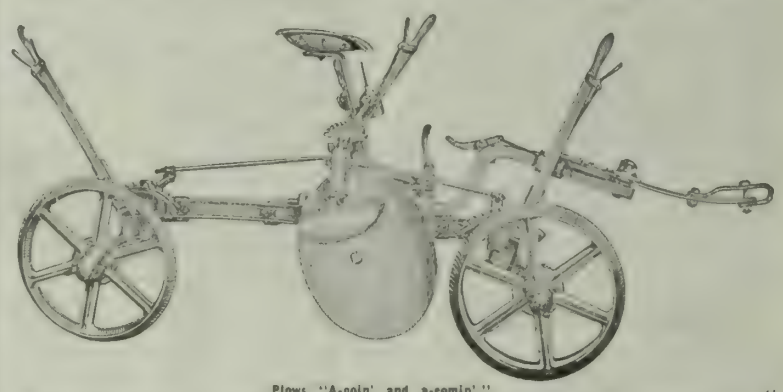
The Silva-Bergtholdt Co.
P. O. Box B Newcastle, Cal.

Benicia Reversible Disc Plows



Plows "A-goin' and a-comin'."

Principle Right Construction Right Results Right Prices Right

The Benicia Reversible Disc Plow

WITH NEW PATENT ADJUSTABLE TONGUE is the most successful Reversible Disc Plow built. It is simple in design, FEW IN PARTS, and perfect in construction, and its durability is beyond question. It is easily operated on hillside or level land.

On Steep Hillside, where a team can walk and draw a plow, it works perfectly.

WE GUARANTEE OUR REVERSIBLE DISC PLOW TO DO GOOD WORK, not only in dry, hard and sticky ground, but to do good work in any fallow ground either clean or trashy, on hillside or level; in short, to do good work anywhere, except in sod land, at any time when plowing can be done. This is making a large claim for this plow but by actual use and tests it has proved to be the ideal plow to meet these conditions.

AS A DEEP TILLER it is an unqualified success. Bear in mind, this Plow is not necessarily for use on hillsides only; it is the best Single Sulky Plow for general use made today.

Baker & Hamilton

San Francisco Los Angeles

A Record Smasher!

We have won the patronage of the farmers through the merits of many styles of plows, but we have never offered a plow with the trade getting qualities of

Oliver No. 2 Sulky

It grips every farmer who sees it. It satisfies fully and quickly every notion he has held as to how a plow should be built and what it should accomplish. Its simplicity gives strength. Its compactness lessens the draft. Its construction makes it convenient to handle. It substitutes a greased wheel for the friction of a grinding, binding graft producing landside.

WE WANT TO PLACE A FULL DESCRIPTION OF IT IN YOUR HANDS. WRITE US

Oliver Chilled Plow Works, San Francisco

LIME FOR LAND

HYDRATED LIME AND GROUND CARBONATE (LIMESTONE)

See University of California Circular No. 111—One Ton Hydrate equals 2 Tons Carbonate

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Fertilizer

Steel is made out of iron by a process of tempering and the addition of carbon.

Good crops are made out of soil, water and sunshine and the addition of fertilizer.

Steel can be made too hard so it will be brittle if too much carbon is used; or too soft and will bend if too little carbon is used.

You can overdo the fertilizer business by wasting it in the use of too much; or waste what you do use by putting in too little.

More often too little, rather than too much, is used and the farmer is disappointed. The best way to do is to write for the Fertilizer book and post yourself on the subject.

Our fertilizer book is a practical study of farming in California, its soil, climate, water and conditions which effect crops—write for it.

The way to learn about fertilizer is to get all sides of it—get the book—it's free.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

Western Meat Co.

704 TOWNSEND STREET
SAN FRANCISCO.

If in Doubt—Plant Prune Trees

The demand for Prunes is constantly increasing and California must supply this demand. With a cheap water rate thru to the Eastern states, giving California growers control of this market, prune trees become

Staple Money-Makers

In the export market they compete successfully with European grown varieties.

Our parent trees of French, Imperial, Sugar and Robe de Sargent have been carefully selected from trees having the best record of QUALITY, PRODUCTIVENESS AND SIZE OF FRUIT.

WRITE US FIRST

The Silva-Bergtholdt Co.
P. O. Box B Newcastle, Cal.

growers to nearly $1,000,00. The crop there this year amounts to about 60,000 bales, which if sold at the average price of $50 a bale would bring nearly $3,000,000. Although a large sum of money has been subscribed for taking care of cotton growers in the southern States, no provision has been made for California growers.

An effort is being made by an experienced sugar beet seed grower of Germany to induce farmers in different parts of this State to go into the beet seed business. The sugar beet factories are said to have given the proposition their hearty moral support. If the plan carries there will be little need for worry as to importation of beet seed from other countries in future years. An experiment is also to be tried out in the Lovelock district in Nevada, by a San Francisco man who owns land in that section.

In writing this office from Cedarville, Modoc county, Geo. M. Warrens states that there has not been more than 10 per cent of a crop of alfalfa seed harvested in the Surprise valley this year. Most of the alfalfa was cut for hay, early frosts, grasshoppers and hot north winds being the cause for the poor seed crop. From 240 acres he only harvested about 5,000 pounds of seed. Prices on number one seed there are 18 cents a pound.

According to the government estimates California farmers produced about five and a quarter million tons of hay the past year, making this the second largest tame-hay growing State in the Union. The yield last year was estimated at 3,700,000 tons.

Arrangements are being made by the Sperry Flour company to handle all grain in bulk instead of in sacks as heretofore. If this plan is carried out by grain dealers generally over the State, it will necessitate a system much the same as those in use in the eastern states.

Because speculators cannot borrow the money with which to buy the bean crops in Santa Barbara county, the bean crop there is moving slowly. Bankers are not willing to loan any money, which accounts for the condition.

Growers in both San Joaquin and Yuba counties were busily engaged last week in harvesting their bean crops while the good weather continued. Heavy shipments were being made at the time from Stockton.

FARM BUREAU DOINGS.

The first event of its kind ever staged in California was the Harvest Festival at Woodland, Yolo county, last week, held under the auspices of the Yolo County Farm Bureau. The morning was turned over to a business meeting of the officers of various locals, and during the afternoon a number of interesting talks were listened to. The various branches had on exhibit products of the soil, the committee awarding the cup for best exhibit to Capay and Guinda valley. About 400 were in attendance and it is planned to make the event an annual one.

The business men of Chico, through their organization, are planning on taking up subjects of interest to the farmers in that section in the hope to better rural conditions there generally. Better markets will be one of the first features to be worked out.

MATHEWS ORCHARD DISC PLOWS

THIS is a simple and compact plow of few parts. Can be had either with one or two discs. Works close up to trees. Will penetrate the hardest soils and the heaviest cover crops without any tendency to get out of the furrow. The front furrow wheel is easily pivoted for turning to or from trees.

The strong simple construction of this plow embodies many attractive features which add to ease of operation.

WRITE OR CALL AND SEE US
for full information, prices, etc.

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ESTABLISHED 1886
200 N. Los Angeles St.
LOS ANGELES

Implements
Wagons
Dairy Supplies
Road and
Grading Machinery

NATIONAL RIVERS CONVENTION.

In a letter to this office from S. A. Thompson, secretary of the National Rivers and Harbors Congress, he states that the next annual convention to that body will meet at Washington, D. C., December 9, 10, 11. Addresses will be made by distinguished speakers from this and other countries on the subject of water transportation, which is of considerable interest to farmers in California on any of the navigable rivers. All interested are invited to attend.

RHODES DOUBLE CUT PRUNING SHEAR

Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

PAT.

RHODES MFG. CO.
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YOU CAN BUILD THIS HOME YOURSELF

We furnish the lumber, trim, windows, doors, cut and numbered to fit our plans.

Also paint, finish, stain, nails, hardware, plaster or interior wallboards.

Follow the plans with a hammer; easy, simple, quick, economical.

A permanent, substantial and attractive home results. Not portable. Satisfaction guaranteed. Illustrated catalogue FREE.

WRITE TODAY

Ready Built House Co.
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BORDEAUX MIXTURE

The standard fall spray for the control of Anthracnose on apple trees, grape vines, blackberries and raspberries, and for the control of Peach Blight (Shot-hole Fungus) on peach trees and other stone fruits.

"Orchard Brand"

Bordeaux Mixture Paste is made from the highest grade of materials, combined by chemical processes and put in paste form. The paste as sold is ready for use and dilutes readily in water, thus overcoming the necessity of dissolving bluestone, slacking lime, diluting the two separately, and mixing together after dilution. It is uniform in composition and when applied thoroughly, it is an effective treatment against the troubles mentioned above.

For further information regarding spray materials and orchard spraying, address

GENERAL CHEMICAL CO. OF CALIFORNIA

S. W. FOSTER, Entomologist. SAN FRANCISCO, California.

Cherry Trees

Cherries are the first, the most attractive and the best fruit of the summer season. This, together with the fact that they are very profitable, yielding from $400 to $600 an acre, makes them a good "buy" for any fruit grower in position to raise them.

Our block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.

THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
P. O. Box B Newcastle, Cal.

Mechanical Power on the Farm.

CLEANING THE AUTO ENGINE.

[Written for PACIFIC RURAL PRESS.]

The simplest, easiest way to clean the carbon from an engine is practiced by O. C. McFarland of San Francisco. With the engine running, he fills an oil pump with water (warm or hot water is best) and squirts it into the air vent of the carbureter so that the water goes directly into the cylinder with the mixture of air and gas. It gets warm there anyway. Then a pump full of coal oil is squirted in the same way and another pump full of water. It blows out of the exhaust and the cylinder is clean.

SOFTENING CAST IRON.

In your machine shop there should be a power drill to make holes in iron. But there will be difficulty in repairing cast iron pieces until they are softened. A simple way of softening cast iron is told below by Prof. S. I. Ross, Colorado Agricultural College.

Some cast iron is chilled in the process of making until it is almost impossible to drill or work it in any way. This may be very easily overcome by treating it in the following way. Take the cast iron and heat it to a little above a cherry red, take it from the fire and place a piece of sulphur on the place to be drilled. If the iron gets too cold place it on the fire again just keeping it above a cherry-red. Continue to throw sulphur on it until it becomes soft enough to drill.

Hardening Cast Iron.—Cast iron may be hardened in the following way: Heat it to a cherry-red then sprinkle it with cyanide of potassium. Then heat the iron again to a little above a red. The iron should then be dipped in water and cooled.

A rod treated in this way should be hard enough to resist the cut of a file and upon breaking it should show that the hardening has penetrated to the interior. The file should not cut the interior any easier than it did the outside.

Wrought iron may also be case hardened in the same way.

ONE ENGINE FOR 12 FARMS.

[Written for the PACIFIC RURAL PRESS.]

A mutual pumping company was organized to irrigate the farms of a dozen neighboring members near Inglewood, Los Angeles county, about eight years ago. They were capitalized at $25,000, but only $9,000 was ever paid in, for that is all that was needed for the equipment. More stock will be sold if they ever wish to enlarge the plant.

A well was drilled 642 feet deep with a pit about 100 feet. Two other wells were drilled 318 feet deep and connected by tunnels with the first so that one two-stage centrifugal pump takes water from all at once. Its capacity is 150 weir inches, but they seldom run over 120 inches. A 60 h. p. gas engine does the work at a cost of 25 cents per hour for a man to attend to it and 50 cents per hour for gas and oil. On one run a few years ago they kept the water flowing steadily for 36 days and nights with only one stop of 45 minutes to tighten the belt.

The water runs into cement weirs whence it is distributed by private ditches to the farms irrigated. Each member gets all of the water pumped when his turn comes, and pays for it the price fixed annually by the board of directors. This price covers the cost of maintenance as based on the manager's figures for the previous year. No dividends have ever been paid, and very little indebtedness incurred.

Stock was sold to land owners, all they wanted up to $25 per acre in $100 shares. One share entitles its owner to all of the water for two hours of daytime and two hours at night every month; so that each would take all the stock needed to get water enough to irrigate his property. Then he would pay the company its price for that much water and whatever more he may want of what the company has to spare.

Sec'y. Mgr. Robert Haenggi, who has been its manager since incorporation, says that the success and lack of friction in the company is due to every agreement having been put into legal written form. He says that the trouble with most mutual companies is that they are too mutual—they agree verbally on too many things, Then when a member sells out and moves away, the new member doesn't know what he is entitled to, and some of the old mem-

"From Factory to You."

The Commercial Engine

Highest efficiency at lowest cost.
A size for every need

Valuable Catalog

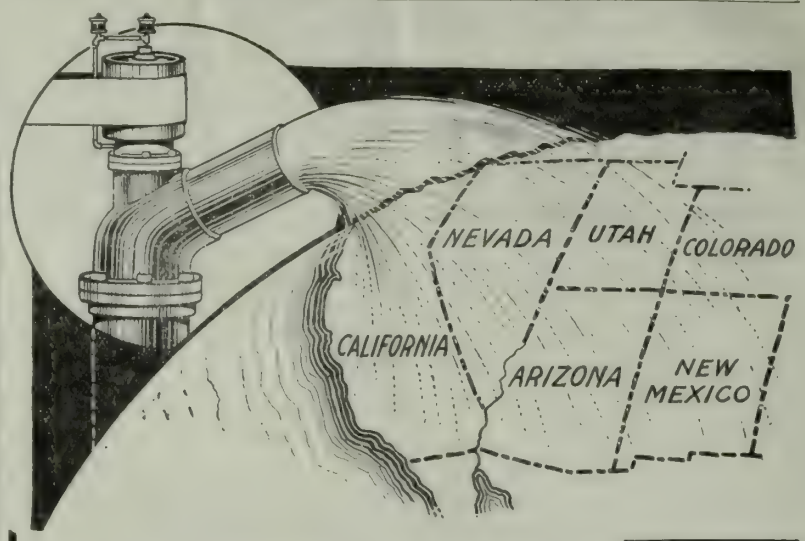
containing useful water tables Free. Send for it.
Some of our users say:
"Shows a very high efficiency."
"Think Commercial best on market."
"Giving us perfect satisfaction."
Before you buy find out about
"The Engine of No Regrets."
Send for catalog 18-R.

Commercial Engine Co.
2416 PORTER ST., Los Angeles
Branch, 1228 "H" St., Fresno

200,000 FEET CHEAP WATER PIPE

Just received several car loads of new and 2nd hand Water Pipe, Oil Well and Water Casing. In ½, ¾, 1, 1¼, 1½, 2, 3 inch and many other sizes. O. D. Casing 2, 3, 3½, 4 in. Riveted and surface irrigation pipe. Big Stock. Prompt shipments. Lowest price. Write, phone or wire.

ADAMS PIPE WORKS.
2030 Bay Street,
Los Angeles, Cal.
Phones Brdy. 1264—F1917
(Under entirely new mngmt.)



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Thousands of ranchers and irrigators place their utmost confidence in the LAYNE & BOWLER SYSTEM of producing water. In practically every section of the great Southwest, working under every condition in wells of various depths, you will find the

Layne & Bowler Pump

This pump well deserves the overwhelming popularity it has attained. Its simplicity and durability, its high efficiency, and its low cost of operation have made it so. The Layne & Bowler Centrifugal Multi-stage Pump has a long lead over other types. Let the World's Largest Water Developers Solve Your Pumping Problems.

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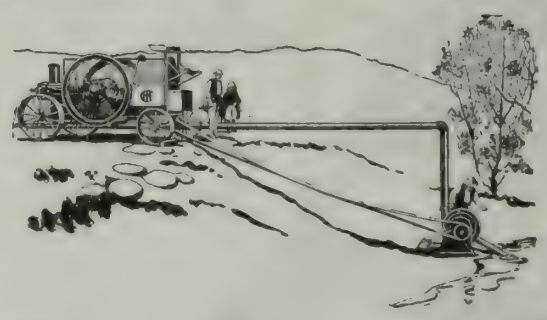
International Harvester Engines for Irrigating



WHEN you put in an irrigating plant of your own, the most important thing to get is an engine that will run your plant at any time you want water. Make the safest selection and buy an I H C oil and gas engine—Mogul or Titan.

An I H C outfit delivers the most power on the smallest fuel consumption. It uses the fuel that is cheapest or most convenient for you to buy. In case of accident you can get repairs in a few hours.

The same engine may be used for running a saw, cream separator, feed grinder, hay press, or any other machine to which power may be applied.

I H C engines are made in sizes from 1 to 50-horse power and in styles suitable for every form of irrigating outfit or for general farm work.

The I H C local dealer near you should be able to show you I H C engines. If he cannot, write us, and we will tell you who handles them.

The I H C Line

GRAIN AND HAY MACHINES
Binders, Reapers
Headers, Mowers
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Hay Loaders
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CORN MACHINES
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Knife Grinders
Binder Twine

International Harvester Company of America
(INCORPORATED)
Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

bers forget just what they did agree to.

In his company he believes that the ditches to each farm should be laid out, dug, maintained by the company, and recorded at the courthouse to avoid disputes when some of the land changes hands; for of course the ditches of some members cross other members' farms. He says "the law ought to be behind everything—then there can be no misunderstanding."

POWER ABOUT THE BUILDING.

[Written for the PACIFIC RURAL PRESS.]

Pumping all the water used on a 20-cow dairy ranch, which of course includes domestic water and that used for horses and dry stock together with the power used in running a three-unit Hinman milking machine and clothes washing machine, costs George Tranter, of Butte county, $1.25 a month.

If one were to take into consideration the cost of labor in pumping that much water and in performing the other work which electric power performs on this ranch, it would doubtless be found that the electric motor has a big lead over hand power from a financial standpoint.

In doing this, power is figured at 2¾ cents per kilowatt hour, a 2 h. p. motor being sufficiently large for all the work done.

The motor itself has been set on the inside wall of the milking barn, making the problem of power conveyance to the milking machine more efficient. Pulleys have been made for gearing down the motor, out of mowing machine wheels, the flanges having been cut off, leaving a smooth surface for the leather belts to run on.

Sitting directly under the motor is an inch and a quarter centrifugal pump which is connected with the well at the tank house some 50 feet away. By connecting this with the motor, water may be pumped either into the tank at the tankhouse, into the residence, or into any of the numerous watering troughs and hydrants located about the place.

When the weekly washing is to be done, the washing machine is hooked up to the motor by means of a leather belt, thus saving a great deal of hard rubbing.

HOME-MADE MANURE CARRIER.

[Written for the PACIFIC RURAL PRESS.]

In order to furnish a track for his manure carrier in his dairy barn, at small expense, H. E. Snyder, of Butte county, uses the wire cable that is used on the hay fork when filling the barn with hay.

During the short time required in filling the hay mow, the manure has to be hauled outside of the barn with a wheelbarrow, but at other times the cable is stretched from one end of the barn to the other and on out to the manure pile some 50 feet from the barn.

A home-made carrier has been made, having a wooden box and fitted with two rollers such as are used on sliding barn doors. These rollers run on the cable and allow of easy disposal of the manure. The cable is supported by small rods attached to the roof of the barn, having a small hook, in which the cable rests. At one end it is anchored to the barn and at the other end to a post in the corral.

POWER NOTES.

A 30-day 7,500 mile trip was recently concluded in Pittsburg by a 35 h. p. Mitchell five passenger automobile, having had the hood officially sealed down all the way. It had touched 23 states, and was still ready for more. The same company now has a car which just arrived in San Francisco from Boston. One of the tires has the original air in it and is good for 3,000 miles more. The cost of the 5,000 mile run (having made side-trips to various agencies) averaged 1 gallon of gasoline per 15 miles and one gallon of lubrication per 800 miles.

F. E. Wadsworth of Siskiyou county has a 6-inch well 96 feet deep in which the water rose to the surface. When pumping 1,000 gallons per minute by electricity, the water lowers about 14 feet and keeps up a continuous supply.

BE SURE YOU GET "AMERICAN" SURFACE IRRIGATION PIPE

YOU DON'T BUY IRRIGATION PIPE EVERY YEAR

If you buy the RIGHT pipe. "AMERICAN" pipe will last for a lifetime. It is the strongest made.

NO RIVETS TO PULL OUT.

"AMERICAN" Surface Irrigation Pipe is not riveted. We make a riveted pipe for UNDERGROUND use, but for SURFACE work riveted pipes have proven unsatisfactory.

THE DOUBLE LOCKED SEAM

of the "AMERICAN" was originated by this company and has proven so successful that many inferior imitations have been put on the market.

LENGTH 10 FEET 6 INCHES.

"AMERICAN" pipe is of heavy sheet metal in 10-foot lengths with a tapered sleeve at the end, making total length 10 feet 6 inches.

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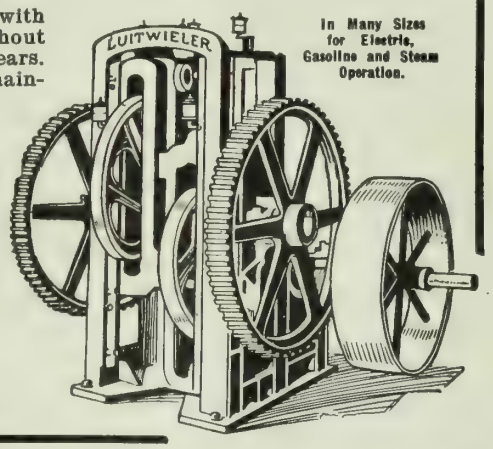
Meet Every Condition Perfectly—Show Greatest Efficiency

The water is discharged with perfect uniform flow, without vibration or back lash on gears. A perfect balance is maintained, eliminating pump troubles and lowering the cost of producing water to the minimum. Luitwieler Pumps will lift 1000 gallons of water 100 feet high for ½ cent.



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You can cook with gas even if there is no Gas Company in your vicinity. The Aero-Gas self-generating plant, made expressly for private country homes, furnishes you with inexpensive best quality gas—either for cooking or lighting.

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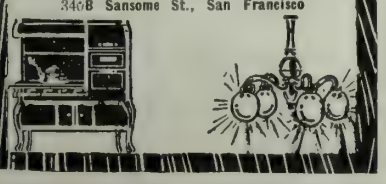

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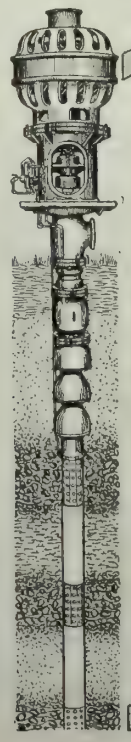

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As perfect as pumps can be made—bring a steady stream of water up from any level—increase the capacity of slow wells—always primed—no valves, gears, plungers or teeth to break, wear or get out of order.

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Adapted for belt drive or direct connection with motor. Cost, compared with the work they do, is very low.

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Dairying in New Zealand.

[Written for the PACIFIC RURAL PRESS.]

"Why is New Zealand butter superior to our California product" was a question we asked of E. Clifton, New Zealand commissioner to the United States, with offices in San Francisco, and the following was in substance his reply.

"Our first cheese factory started in 1887 and at the present time there are over 820,000 dairy cows in our country. Most of our farms are operated by small farmers who are chiefly dependent upon the dairy cow for their prosperity. Our annual export trade with London amounts to $21,750,000 worth of dairy products, $10,750,000 of which is cheese and $11,000,000 worth of butter.

"Co-operative plants handle this entire output, each butter or cheese factory being under the control of an association, whose chairman and directors deal with the entire manufacture and sales.

"These bodies meet at the beginning of each year and set the price to be paid for fat during that year. This is generally a conservative estimate and is increased at the end of the year by a bonus, the amount of which depends upon the success of the organization.

"The amounts due patrons are paid each month, the dairyman being the only one who follows rural pursuits that secures monthly payments for his products. Grain, fruit, beef or sheep growers receive their money but once a year as in California, which is often a considerable handicap.

"Some of these co-operative associations operate their own department stores, selling all kinds of supplies, at prices which allow interest on investment and expense of operating. One of these associations has made an annual turn-over of $500,000 in their store business alone.

"These same associations have grouped themselves into larger bodies, in order to provide security for large areas of forest lands, from which to supply lumber for butter and cheese crates, thus securing such supplies at actual cost.

"In association with the above organizations, are bacon-curing establishments, which handle the pork products of the farmer in much the same manner that the butter is cared for.

"At the agricultural shows of the associations, or fairs as they are called in California, liberal prizes and trophies are provided for competition, in both butter and cheese. These are eagerly sought, the factory manager who secures such prizes being further rewarded, inasmuch as his services are decidedly sought by the more important associations. He also shares in the increased price for butter which is invariably received by his factory.

"A very great factor as affecting the dairy produce of New Zealand is that the cattle graze on pasture the whole year round. The housing of cattle in stables is unknown. It is quite true that the cows are taken into a shed for milking, but the climate renders unnecessary the practice of stabling, so costly in labor and usually so insanitary in itself and surroundings.

"The corral substitute for the stable in California is equally unknown. It would appal a dairyman of New Zealand to see his cows treated in what would to him seem such an evil manner. To confine cattle in such an inclosure day after day and to carry every pound of feed for his cattle would actually appeal to him as incredible.

"Our splendid climate and fertile soil provide the farmer liberally with pasture for his dairy stock. The grasses composing these pastures are rye grass, orchard grass, timothy, crested dog's tail, oat grasses, and clovers.

"These are practically permanent pastures insomuch as many of them have not been plowed or reseeded for many years. Indeed there are pastures where the whole preparation of seeding has been the cutting down of forests and sowing of grass seeds. In certain districts where the forests have been light nothing has been done except to burn off the heavier brush, reseed and stock heavily.

"These pastures must be supplemented in summer when the grasses are dry and in the winter when the growth is retarded by the colder season. For this reason corn, oats and Italian rye grasses are grown fairly extensively, to be cut and carried as fodder to the pastures.

"The government has recognized the value of alfalfa and has provided seed and inoculated soil to advance the cultivation of this plant, believing that alfalfa is of importance to the prosperity of the dairy industry.

"In the winter months hay and roots such as mangels and turnips, are available. Hay or mangels are carted to the pastures. The other varieties of roots, such as turnips, are usually provided to the dry stock. These are often consumed by that class of stock in the field in which they are grown, or at times one-third of the crop is fed in the field and the balance is carted to adjacent pastures.

"On the dairy farm where a few sheep are raised roots are invariably grown. The only human labor in harvesting the crop is to run over the ground with a spring tooth harrow after the stock has eaten off the tops, thus lifting the remaining portion of the root and so permitting the animals easy access to all of the feed.

"The State has also recognized the importance of the dairy industry and has therefore provided storage under controlled temperature, at all of the principal ports.

"In concurrence with the dairymen, it has provided legislation for the grading of dairy produce and also careful regulation to make sure that the quality is good. This protects both the buyer and seller.

"It goes even further by maintaining a staff of inspectors to visit farms and factories to insure the health of the animals and the best of sanitary methods. When the product reaches port a government expert grades the butter and cheese.

"No dairy produce is permitted to be exported till it has been graded. This system of grading has become so appreciated and reliable that it is accepted and purchases made by foreign buyers on the grade certificate alone. The

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GOMBAULT'S
CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all Lameness from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
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O. I. C. SWINE—The White Breed. Entire herd immunized against hog cholera. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars in use. All stock sent out will be immunized, registered and crated at purchase price. Send your orders now. C. B. Cunningham, R. J. Mills, Sacramento County, California.

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FOR SALE—Holstein Bull, Tuebie Colantha Lad, by Sarcastic Blossom Lad, Dam Stafford Mercedes Aaggie Tuebie, coming five years old. First class condition and sure breeder. F. H. Daniels, 1350 Park St., Alameda.

TEN REGISTERED HOLSTEIN COWS for sale. Young and many with big records. Also a few well-bred heifers and bulls up to nine months old. K. W. Abbott, Milpitas, Cal.

AYRSHIRES—For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

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HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

JOHN LYNCH, breeder of Registered Shorthorns. Milk strain choice. Young stock for sale. Box 321, Petaluma, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thorough-bred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Maybews, Sacramento county, Cal. A. B. Humphrey, Prop.

REGISTERED HOLSTEINS—Auctioneer and Breeder. T. J. Gilkerson, Stratford, Cal.

I NOW OFFER two young registered Holstein cows. J. W. Benoit, Route 2, Modesto, Cal.

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REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in state. $30 up. M. Bassett, Hanford.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE—Three fine, well bred saddle horses, four and five years. Dan Logan, sire. H. J. Hansen, Davis, Cal.

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SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Runlap, Manager, Newman, Cal.

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THOROUGHBRED BELGIAN BUCKS and Does for sale. Geo. B. Vawter, Arbuckle, Cal.

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FRANK MEACHAM, Petaluma, California.—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

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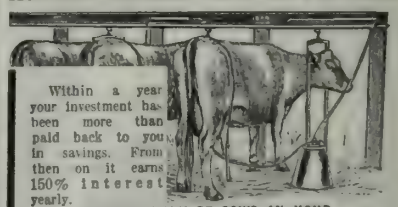
Within a year your investment has been more than paid back to you in savings. From then on it earns 150% interest yearly.
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The Hinman Milker is noiseless, light, easily cleaned, easily adjusted. Exclusive features—no vacuum in pail; no piping—just a simple drive rod; only two moving parts; quick pail changing idea; separate machines. "A success for six years." One is near you. Write for free booklet explaining our claims.
HINMAN MILKING MACHINE CO., 52-62 Elizabeth St., Oneida, N. Y.

principal market is London and there the purchases are made on grade one or two as the case may be. There is no question of quality, the inspector's certificate is final,

"The exportation to Canada and Pacific Coast States is assuming considerable proportions. In the Canadian ports this butter is already accepted as being of great importance, due to its being so available in the construction camp, mining camp, and other districts that are being developed and which do not as yet have any home supply. In the California ports the importations are intermittent, coming when the domestic supply is limited.

"New Zealand butter has established a reputation in London, commanding a price but slightly less than the Danish product, which is known throughout the world as a standard for excellence.

"We are fortunate in having an ideal climate and soil for dairying and in having availed ourselves of the opportunity of improving our natural advantages through the co-operation of the dairymen."

FOOT AND MOUTH OUTBREAK

The recent outbreak of the foot and mouth disease, among cattle in several of the eastern States has occasioned no small amount of interest on the part of western livestock men, although at the time this is written the only States which have been quarantined are New York, Maryland, Indiana, Michigan, Ohio, Illinois, Pennsylvania, Delaware, New Jersey, Rhode Island, Iowa and Wisconsin, also against Canada.

Locally there is not much information to be had from any official source, the daily dispatches from the east being relied upon largely. It is however apparent from these reports that no cases have been found in the Western States, although a quarantine has been placed on California against the foot and mouth disease, as a safeguard for cattle in this State.

Government officials declare that it is impossible to state how long the quarantine will be kept on those States already affected, as so much depends upon how widely distributed the disease has become and how long it will take to eradicate it.

The disease itself is seldom fatal to animals, affecting as the name implies the mouth and feet, the latter being much like a foot rot. Its chief menace to the livestock industry lies in its habit of rapidly spreading and being highly contagious.

Officials at Washington have issued an appeal to farmers to watch all cattle closely and immediately report indications of trouble. Sore feet or mouths are suspicious conditions and should be reported without delay.

The authorities in charge of the quarantine are earnestly urging every farmer to report at once any suspicious case of sore mouths and lameness among his stock. This is regarded as absolutely indispensable, if the disease is to be stamped out. Unreported cases of disease may result in spreading the infection over areas which could otherwise be safeguarded. Persons who have recently received shipments of cattle from the infected areas should at once isolate them. The disease takes only from four to six days to manifest itself, so that this precaution should cause but very little inconvenience.

Co-operation by the public is essential to prompt repression of the plague. Much of the infection existing today could have been averted by prompt action.

ROOT CROPS FOR DAIRY COWS.

To the Editor: Would you please inform me through your paper the value of beets for dairy cows. If they will increase the flow of milk and if they are healthy. Also their value in fattening pigs and what variety is best for these two purposes, the Mangel Wurzels or the Sugar Beet?—P. E. P.—Ceres, Calif.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

[Beets are excellent feeds for dairy cows and have a very beneficial influence on the milk flow. It is generally understood that cows do better when receiving some succulent feed in their ration than when on dry feed only; and when pasture is not available, farmers have the choice between root crops and silage. Both of these are good dairy feeds; and where a farmer does not have a silo, it is a good plan to grow some roots for the cows. Roots are also greatly relished by pigs. Sugar beets and mangels are well adapted to feeding dairy cows. The former will, as a rule, give considerably heavier yields than the latter, but they also contain more water. Considering the amount of dry matter produced per acre, there is less difference, but mangels are likely to produce somewhat larger yields of dry matter than sugar beets and are also more easily grown than these, so that they are generally preferred. The common long red mangel or the half-sugar mangel will give very satisfactory yields and are excellent feeds for both cows and pigs.]

REGISTERING CATTLE.

To the Editor: I have quite a number of pure-bred Jersey cows, all bred from registered stock, but registering was discontinued some years ago on account of lapse of county fairs, where my grandfather exhibited his stock. The bulls that have been used are all registered, but it would be necessary to go a long ways back on some of the cows. Can such cows be registered, and if so, what would be the cost?—F. W., San Luis Obispo.

[Answered by J. E. Thorpe, Secretary California Jersey Cattle Club.]

[To register his cows at the present time your subscriber will have to have each cow registered, from the last registered one down to his cow of today. Not only that, but each bull must also be registered, that the pedigree can show the name and number of each animal there is, back to registered stock, or even back to the Jersey Island, to foundation stock. I would advise your subscriber to take this matter up directly with R. M. Gow, Secretary American Jersey Cattle Club, 324 W. 23d St., New York, N. Y.]

Bloat in cattle is an unnecessary factor. Feed your cows in the corral, and you won't have to be running cows up and down the road over ditch banks, etc., when you are already busy doing other necessary work.

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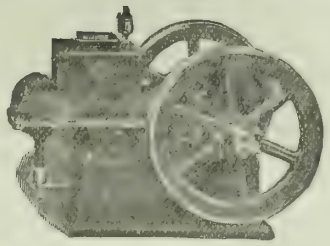

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Dairy Barn Construction.

To the Editor: I am planning to build a milking barn, and would like your advice as to the desirability of the following dimensions. Back wall 8 feet high, walk or driveway 4 feet, gutter 16 inches, being 4 inches deep on back side and 6 inches deep in front, platform 4 feet 8 inches, curb for stanchion support 5 inches thick and 8 inches high, manger 6 inches deep and 2½ feet wide, sloping from feed alley to bottom of curb, and a feed alley 8 feet 6 inches, having slightly curving surface toward the mangers. How much of a slope to the foot should platform and driveway have toward the gutter? Should the bottom of the gutter be level or should it slope toward one side and if so to which side? How much slant should the floor have lengthwise to give sufficient fall for flushing out the gutters? What finish is best for concrete to prevent cows from slipping? Have been advised to put on a cerated surface, such as may be seen on rubber mats, cerating and cross cerating. The grooves of course would be shallow. Is this a good plan? Will use steel stanchions. Is it best to use swivels in the chain hangings or not?—F. W. W., San Luis Obispo.

[The proposed height of your back wall is satisfactory, but would advise you to build the first four feet out of concrete, making a wall about four inches thick. This will allow flushing off any manure that may splatter against the wall. Windows, for ventilation and light, should be placed above this concrete, with provision made for opening or closing them. Five feet instead of four feet should be allowed for the walk back of the gutter, as it will give you more room for driving cows in or out, while others are in stanchions. The walls of the gutter should be the same height on both side, preferably 2½ or 3 inches, and the entire gutter should slope with the floor of the barn. Deep gutters are not desirable as cows are more apt to receive injuries from slipping into them. The bottom of the gutter should slope slightly toward the outside wall, thus allowing the liquid manure an opportunity of draining off from the solid matter.

It would be better to build your platform 5 feet wide, and by having swivel stanchions you can regulate the distance between stanchion and gutter to conform with the size of your cows.

The dimensions you give for the curb are satisfactory, but in making same you should make about a 2-inch hole in the bottom of each manger, thus allowing an outlet for any water used in flushing the manger. We see no particular reason for having feeding alley convex in shape.

A two-inch slope from manger to gutter should drain your floor satisfactorily, and about six inches slope to the 100 feet will be satisfactory for the gutter and floor. If not over 50 feet long it would be well to drain floor and gutter to one end, but if say 100 feet long it would be better to have floor and gutter slope to center of barn, using a drain at that point to carry manure and liquid out of the barn.

A rough floated cement finish is usually found most satisfactory for platform and walks in cow stables, as it prevents slipping to a considerable extent. We have never seen the finish you describe in use, but would consider it an unnecessary expense. Would advise using the swivel stanchions as they allow more comfort for the cow while in the barn.—Editor.]

GROWING THE EASTER LAMB.

(Continued from page 465.)

shed is used, having a capacity, however, of 2500 ewes, so divided that 50 are put into each pen. In cases of urgent need, when the weather is bad, a considerably larger number may be sheltered at this building by using additional corral room on the outside.

After turning out of the lambing shed, Mr. Glide starts his feeding campaign, using alfalfa hay for both ewes and lambs, which is supplemented by the use of either bran, barley, oats, rolled wheat, or silage, according to the price or availability of the seeds mentioned.

Lambs fed in this manner last year, and sold on the Easter market, brought an average price of $6.90 a head, the big difference between this and Mr. Stimmel's price undoubtedly being due to the better feeding.

As before stated the mothers of these lambs would sell for a very ordinary price in the fall of the year, but after receiving such good care and feed during the winter, they also are in prime condition, and striking an impoverished market as they do in the spring they bring top quotations.

Of necessity, the raising of lambs on these two ranches is done in a large way, which does not permit of the efficiency that could be expected in smaller operations, where more care could be given to the detail work.

It would seem, therefore, that alfalfa growers, both large and small, would find the Easter lamb a highly profitable animal to breed and raise.

Receipts of cattle were so light at the Portland Union Stock Yards last week that there was no chance to arrive at a sound quotation. The hog run was about 50 per cent less than it should have been, the bulk of offerings going around 7 cents. All lines of sheep maintained good strong prices in face of light receipts.. Lambs of good quality are bringing $6.25, ewe tops $4.50, wethers remaining at the $5.50 mark.

The successful cattle man invariably treats his stock with as near the same consideration as he would a human being. Kindness with all kinds of dumb animals pays large dividends in the end.

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Use any injector, but Cutter's best.
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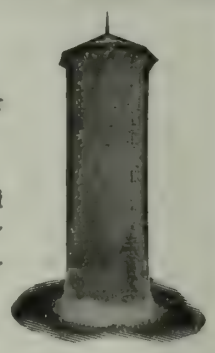

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With the Livestock Men

A consignment of 15 carloads of sheep and seven carloads of steers was received in Kings county last week from Arizona and New Mexico.

A shipment of 15 carloads of Nevada sheep were received in Sutter county last week where they will be pastured for some time before being marketed in San Francisco.

Weather conditions are said to be exceptionally favorable for a good season in eastern Shasta county and stockmen are expecting plenty of feed.

Late reports from Livermore state that the outbreak of anthrax has not as yet been curbed and that two animals in the P. Connolly herd died last week.

The McEnerny ranch near San Jose has just been sold to M. S. Brazil, of Oakland, who expects to establish a modern dairy and sell whole milk to the San Francisco trade.

Reports from Nevada state that during the past two months, 150 carloads of horses have been shipped from that State, principally to New York City. Prices are not mentioned.

There is much talk in Hanford, among the merchants, to provide a permanent sales pavilion in order to assist Holstein breeders in holding yearly or semi-yearly sales. It is thought that future sales will include a larger number than were consigned at the last sale.

Meetings have been arranged for by the Hog Raisers' association of Imperial valley, to be held at Brawley, Imperial, El Centro and Calexico during this month. The object of these meetings is to furnish farmers an opportunity of learning more about cholera and its suppression.

In a communication to this office from Napa county we are advised that steps are soon to be taken toward the forming of a cow-testing association in that county. More of these associations having members who would stay with the work year after year would greatly improve the dairy industry of the State.

Word comes from the east that the Paicines ranch, in San Benito county, has purchased the entire Haggin herd of Shorthorns of Kentucky. This is one of the most noted herds in this country and includes the bulls King Cumberland and Fayete Marshall. They should add greatly to the quality of Shorthorn blood in this State.

A number of dairymen of Yolo county have recently organized a dairymen's association and elected the following officers: A. W. Morris, president, N. P. Searles, secretary, and C. F. Evans, treasurer. One of the chief purposes of the organization will be marketing of dairy products, which will be under the supervision of a committee, to be appointed by President Morris at an early date.

The Holstein cow Tilly Alcartra, owned by A. W. Morris and Sons of Woodland, has broken the world's milk record, as was predicted would be done in these columns some time ago. This record was formerly held by the Holstein cow Creamelle Vale, whose record was 29,600 pounds, and this amount had been produced by the Morris cow, 13 days before the expiration of her year, thereby allowing plenty of time for several hundred pounds more milk for the year's test.

In summing up the average prices received in the Livermore district during the past season for livestock sold at auction sales, a local auctioneer of that place states that calves less than one year old have averaged $27.50, steers and heifers ranging from 18 months to two years, $50 a head, milk cows $70 a head, hogs 11 cents a pound and chickens from $6.50 to $10 a dozen. A noticeable feature of all sales was the large number of horses purchased by city horse buyers instead of farmers.

At a meeting recently held in San Francisco, an organization of beef cattlemen was perfected which is to be known as the California Cattlemen's Protective Association. The association passed resolutions discouraging the formation of union stock yards in San Francisco to replace present conditions which they claim are satisfactory. The following officers were elected: H. W. Lynch, president, Fred H. Bixby, vice president, E. W. Howard, second vice president, T. A. Trescony, third vice president, Ed. de L. Cebrian, treasurer.

In another column will be seen the announcement of Geo. A. Smith, of Corcoran, Kings county, announcing the date of his next sale of registered Holstein cattle. Mr. Smith's last sale was entirely successful, due to the fact that he had used care in selecting the animals he offered for sale, and we are informed that the lot to be sold at the next sale are of equally high quality. A number of those to be offered in this sale were secured from the Mullick and Glenn herds in Glenn county, the former herd having been the result of continual breeding on the part of Mr. Mullick for a number of years. Judging from the success of the recent consignment sale held at Hanford, the demand for purebred Holsteins is greater here than it has ever been before and buyers are eager to take advantage of the opportunities being offered at these sales.

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ALL animals improve in condition and increase their product of flesh, milk, wool, etc., by being fed liberal rations of cut roots. No matter what else you feed, cut roots will improve the ration. They add a zest which means increased consumption of roughage and aid in digestion and assimilation. They put a top finish on market sheep and lambs. They put color and richness in milk and cream and resulting butter.

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for both hand and power, prepare roots in the best possible way. Cut so fine as to prevent all choking of animals. It's done with the "Non-Choke Curve Cut." Made in seven sizes. Write for free illustrated booklet. Every animal condition will be improved by feeding a ration of cut roots.

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GEO. A. SMITH'S 5TH SALE OF REGISTERED STOCK.

Corcoran, Cal., Saturday, Dec. 12. 1914

65---Registered Holsteins---65

ARE THESE SIRES GOOD ENOUGH?

SEGIS OAK HOMESTEAD FOBES, a splendid sire from a Leading Wisconsin Herd. Sire of One A. R. O. Daughter, who as a 2 yr. old made 12.99 lbs. Butter—350 lbs. Milk in 7 days. He is a son of Judge Beets Segis (7 A. R. O. Daughters), son of King Segis (86 A. R. O. Daughters—7 over 30 lbs. each), the first Holstein sire to sell for $10,000, and sire of more Junior 2 Yr. Old 20 lb. daughters than any other one sire, the Greatest sire of his generation. His dam is the $800 Oak De Kol 2d Fobes, 22.72 lbs. Butter—530.4 lbs. Milk in 7 days, a daughter of Fobes Tritomia Mutual De Kol (30 A. R. O. Daughters, including Lady Oak Fobes De Kol, 36.44 lbs. Butter in 7 days—991.5 lbs. Butter in 1 yr.), son of Moole Mutual De Kol, 35 A. R. O. Daughters. Her dam, Oak De Kol 2d, has a record of 29.55 lbs. Butter in 7 days—100.97 lbs. Butter in 30 days, a daughter of Homestead Jr. De Kol (69 A. R. O. Daughters, including Grace Fayne 2d Homestead, 35.55 lbs. Butter in 7 days) and from a 31.54 lb. daughter of De Kol Burke (72 A. R. O. Daughters—7 over 30 lbs. each including Riverside Sadie De Kol Burke, WORLD'S CHAMPION MILK COW, 920 lbs. Milk in 7 days—54,808.2 lbs. Milk in 2 yrs. His 7 nearest dams have average 7 day Butter Records of 27.6 lbs. each. His 7 nearest sires have 301 A. R. O. Daughters—14 over 30 lbs. each SEGIS OAK HOMESTEAD FOBES and 9 of his Sons and Daughters will be offered in this sale.

JUDGE HENGERVELD PAUL WAYNE, a coming young sire from a Leading Pennsylvania Herd, son of the $2500 Judge Hengerveld De Kol (12 A. R. O. Daughters—one over 30 lbs.), considered the best son of the famous Hengerveld De Kol (116 A. R. O. Daughters—8 over 30 lbs. each—79 over 20 lbs. each, including Pontiac Jewel 992.11 lbs. Butter in 1 yr., Pontiac Pleione 925.56 lbs. Butter in 346 days). Johanna Vernon De Kol, the dam of Judge Hengerveld De Kol, sold for $1300. She has a record of 28.60 lbs. Butter in 7 days—113.45 lbs. Butter in 30 days, and is a daughter of Johanna Rue 3d's Lad (47 A. R. O. Daughters—3 over 30 lbs. each, including Belle Netherland Johanna, 1103.83 lbs. Butter in 1 yr), and is from Susie Vernon De Kol, a 21.91 lb. daughter of Homestead Vernon De Kol, 13 A. R. O. Daughters. His dam is a double granddaughter making her equal to a daughter of De Kol 2d's Paul De Kol No. 6 (13 A. R. O. Daughters), son of De Kol 2d's Paul De Kol, 45 A. R. O. Daughters including Aaggie Cornucopia Pauline, who sold for $6000, and whose record is 34.32 lbs. Butter in 7 days—137.62 lbs. Butter in 30 days—WORLD'S RECORD when made. This extraordinary young sire, JUDGE HENGERVELD PAUL WAYNE, will be offered as a Special Attraction. One of his half-brothers when 4 weeks old sold for $665, and another half-brother when one year old sold for $1675.

Several other sires carrying the Blood that has produced WORLD'S CHAMPIONS, and from splendid dams, many with A. R. O. records and ALL from GREAT MILK AND BUTTER ancestry will be offered in this Sale. Sires bred like these will transmit to their offspring great Milk and Butter Production.

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DAVIS, CAL. T. S. GLIDE, Prop.

Breeder of Shorthorn Cattle, French Merino and Shropshire Sheep.

At 1914 State Fair our Shorthorns took first prize in every class we entered except two, and in these were beaten only by stock of our blood. We took all the herd prizes, first and second prizes in produce of cow and first in get of sire.

KING LANCASTER, 3 times Grand Champion

Below is a list of our Grand Champion bulls for the last eleven years—a list that will stand for quite awhile:

1904—Hillcrest Hero
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1908—King of Greenwood
1909, 1910, 1911—King Lancaster
1912—Greenwood Knight
1913—Greenwood Knight
1914—Greenwood King

All except the first two of the list were bred by us. We have beaten a number of bulls that were bought in the East at prices ranging from $500 to $3000 and brought out here to beat us.

Range raised young bulls for sale, single or carload lots.

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6 years old, sound and alright every way. I carried away two prizes with him at the California State Fair this season.

I will sell this horse cheap if sold soon. For further particulars write me or come and see the horse.

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Poultry for Profit

[Written for the Pacific Rural Press
By Susan Swaysgood, Pomona.]

Preparing Against Sickness.—A great many people are complaining of sick chickens and in a general way we will say that most of these troubles can be avoided by preparing the birds against them. Hens that are coming through the molt need a little toning up and the very best general tonic I know of is the following, which aids digestion: Tincture of red cinchona, one fluid ounce; tincture of chloride of iron, two fluid drachms; tincture of nux vomine and water to make four fluid ounces.

This can be put in the water, but as a rule chickens do not like it; so it is best to mix with water, then mix a quantity of mash with the water and feed on clean boards or troughs. In this way you know they get it and it does not punish them by keeping water away. Young stock that are nearing maturity are more likely to take roup, canker, and chicken pox. All these are nasty troublesome things to get in a flock, and most always they can be prevented by proper housing and feeding. Tone up the young stock with a change of feed. If you have skim milk, set a kettleful on the stove and let it come to boiling point, even if it curds; then mix up a mash adding a good part of ground alfalfa to it and a little salt; feed this once or twice a week and you will soon see the youngsters get so they can resist these fall troubles.

For roup the ailing ones must be segregated and the heads dipped, according to the virulence of the case. For mild cases one teaspoonful of creolin to a pint of warm water will be strong enough, or a solution of water and peroxide. Not more than three or four birds should be dipped in the one lot of liquid no matter what it is; get a fresh stock for the next batch.

A little blue vitriol or, as it is better known, blue-stone, put in the drinking water for about three days will be found a good cheap germicide. A piece about as big as a pea is sufficient for a gallon of water, and the water must be in crocks or glass. Iron or tin vessels must not be used as it will corrode them. Keep away from children as it is poison. This is not only a germicide but it acts as an alterative and changes the condition of the blood, but don't overdo it for it makes fat chickens thin.

For very bad cases of roup I will back coal oil every time, but as I have said many times, it is a harsh remedy. Always give roupy chickens a physic of some kind and all they will eat of good nourishing food. Build them up and disease won't get much hold on them.

Chicken pox is about the limit and when you get it you don't want to lose your spectacles for you will really need an extra pair to find every case. The quickest remedy for this is Kreso Dip No. 1. Make it good and strong with warm water and dip heads in it several days in succession. Another safe remedy and quick is nitrate of silver, 4 grains in 2 ounces of water. Apply with a brush after pulling off the sores. This is a nasty job, but you will not have to repeat often as one treatment about cures. If you have a number afflicted you will need a larger quantity than is given but it can be mixed in the same proportion. I have seen bluestone used but it is not so good and is certainly very harsh.

Not all cases of canker are roup, but there is a tendency to develop into roup. When you see canker in the mouth always investigate further and see if the windpipe is clear, as it very soon spreads and once it lodges on the windpipe it calls for a funeral.

Canker in the mouth or on the beak can be very quickly cured if you go about it right; it is not a case for mincing, or experimenting; you have to go right after it. Take a blunt instrument, a woman's hairpin is all right, and with the bird held under the left arm hold the mouth open with the left hand, now take the prongs of the hairpin in the right hand and scrape out the cheesy stuff with the rounded point of the hairpin. Wipe the place with a soft cloth; it will perhaps be bleeding, but that won't hurt, and on the place where the canker was, put finely powdered bluestone. I never saw a case of canker that bluestone would not cure. What is more, I never saw a case of fistula in a horse that powdered bluestone would not cure. For the latter you want to fill up the hole after taking out the core with a knife, with powdered bluestone and turn the horse out on grass for a week or two.

See to it that your birds are not sleeping in drafts or houses with open cracks, as these are often to blame for the poultryman's troubles. A pound of prevention is worth a ton of cure, but we are very careless in things that don't touch our own comfort.

The city fathers of Venice have passed a law that all men taking out licenses to gamble off turkeys and chickens must give a lecture to the winners of birds and the proper way to carry them. Heretofore when a man won a turkey he grabbed it by the legs and went swinging off home with it; now he must carry it under his arm or he is liable to be fined. Now that is a humane step in the right direction, but it looks bad that men have to be made to do such simple acts of thoughtfulness, because carrying birds by the legs is simply lack of thought as to how it feels.

Poison or Sunstroke.—"I have a hen, brown Leghorn, two years old, that seems in perfect health, feathers glossy, comb red and bright, but she has something wrong with her, for she goes along with her nose near the ground and her neck stretched out. Every few feet she shakes her head and backs up quite a ways. She is beginning to refuse to eat much. Have been feeding wheat, wheat bran and some milk and for bulk alfalfa hay. They are fed on barley and oat hay and once in about six weeks I give them Epsom salts in their water. Water and milk pans are kept clean and at times are washed in carbolic acid. Houses are kept clean. What is wrong and how can I cure her?"—J. W. P., Yuba.

[I think your method of feeding and cleaning up is all right; the hen is either suffering from ptomaine poisoning or from sunstroke. A dose of olive oil is the first remedy you should have given, as it has gone so long as it is a question whether there is any chance to cure it now. But taken in the first stages, it is curable. In all cases there is intestinal irritation and a dose of olive oil or castor oil, if the other is not at hand, will very often put things right. Evidently the bird has picked up something, perhaps a dead mouse or some other irritant form of animal food. At any rate you can try giving the olive oil now and after that mix up a small quantity of lard, gound ginger, ground mustard and cayenne pepper, give a pill about as large as a lima bean and keep the hen warm. If she shows signs of improvement change the diet for awhile. Give a little boiled rice and a raw potato chopped fine.]

POULTRY NOTES.

The annual meeting of the American Poultry Association of California will be held in Petaluma, on Saturday afternoon, Nov. 21, 1914, at 1 o'clock, in conjunction with the an-

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MACFARLANE STRAIN White Leghorn Eggs. $5.00 per 100, chicks Jan., Feb., $12.00, afterward $10.00. Order now, any quantity Cockerels, $2.00; White Rock eggs, chicks, cockerels. Write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. N.B., See article about us by Prof. Adams, U. C., in October "Poultrycraft."

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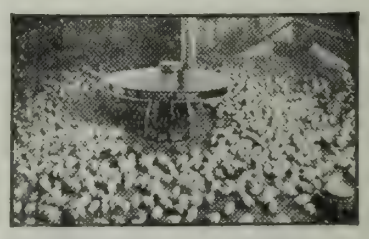

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nual Poultry, Pigeon, and Pet Stock Exhibition of the Petaluma Poultry Association. In addition to the reports of officers for 1914, other matters will be considered, not the least of which will be the International Panama-Pacific Poultry Exhibition in San Francisco in 1915, and the annual convention of the American Poultry Association for that year in this State. In view of these events a full attendance is urgent.

An interesting program and itinerary is promised by the gallant poultry fanciers and breeders constituting the membership in Northern California. Of course you will want to enjoy their fellowship as well as the meeting.

H, J. Guise and L. G. Bly have leased a farm near Winters and will go into poultry raising on a large scale. Mr. Guise has been in charge of the poultry plant at the University Farm, at Davis, for the last four years and is thoroughly acquainted with Yolo county conditions. It is planned to have about 5,000 laying hens in two years' time.

Three trustees were appointed at a recent meeting of the Sonoma County Poultry Producers' Federation, who will have charge of the affairs of the association looking after the making of the contracts for next year's eggs, and other matters of importance.

Steps have already been taken by the Sacramento Poultry Association to insure the success of next year's show by holding it directly after the show held in Oakland, which will take place the first week in December.

Much interest is being shown in the rabbit exhibit at the San Francisco Poultry Show, which runs from December 8th to 13th. The rabbit display will be the largest ever held on the coast. The largest number of entries will be in the Flemish, German and Belgium Giants and the New Zealands. However, goodly representatives will be made of English Lops, French Lops, Dutch, English, Himalayas, Silver Polish, Black and Tans, Angoras, Imperial Blues and Havanas. Besides a fine showing of English, Abyssinian and Peruvian cavies. The dressed rabbit exhibit will be highly educational, showing the proper way to kill and dress for the markets. The rabbit judges who are to award the valuable prizes are L. Regner of San Mateo and Arthur Petty of Burlingame.

SACRAMENTO POULTRY SHOW.

[Written for the PACIFIC RURAL PRESS
By James D. Yates, Modesto.]

Last week Sacramento did well in giving a high class poultry show, and it was well attended by the poultry people, also the city people. All seemed very much interested in the fine standard bred fowls. We say "standard bred" because many people want to call it fancy poultry. It may be fancy, that is pleasing to the eye, but it is all bred to conform to the Standard of Perfection Book. Thus it is properly called standard bred. There was on exhibit one peculiar fowl from Japan. The variety is called "Sakura." The bird's tail is two long sickle feathers six feet long.

Sec'y C. A. Wilkins worked very hard and it was largely through his efforts that the show was a big success. Some of the winners were O. B. Morris, Lodi, with fine white Leghorns; C. R. Fontana, Dixon, also with white Leghorns; Mr. Giddings of Lodi, who breeds the big Toulouse geese and R. I. Reds. Dollie Stackhouse of Sacramento won the specials on Flemish Giant rabbits. Mrs. Winslow, the White Rock breeder, showed some good birds. Harry Rains, Folsom, Cal., exhibited mottled Anconas, getting most of the firsts.

Cameron Bros., Sacramento, showed their usual high class Barred Rocks and R. I. Reds. Their winnings in both varieties were something to be proud of.

Paul McCulloch and Mrs. H. F. Hegan showed Campines and the quality was good all through. The judging was done by N. E. Luce of Los Angeles and C. G. Hinds of Oakland; and a general satisfaction was expressed by the exhibitors in the judging.

Farm Bureaus now seem assured for both Solano and Placer counties. The work being done by the University along this line is gradually broadening out and it seems probable that all of the larger agricultural counties will have advisers in another years' time.

WANTED Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

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THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 23, San Francisco.

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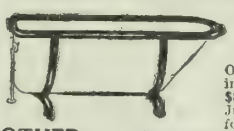

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The Home Circle

A THANKSGIVING DINNER.

Vegetable Soup.
Roast Turkey. Baked Oysters
Cranberry Sauce. Stuffed Olives, or Peach Mangoes.
Mashed Irish Potatoes. Squash
Chicken Salad.
Ice Cream Chocolate Cake.
Salted Almonds. Cheese.

I should serve the above menu in four courses, though it may be served in more, if so desired, writes Mrs. Betty Mackey. The decorations of the table will depend greatly on what I am able to get. This year I shall garnish the dishes with parsley, as I have a nice supply. The table linen will be pure white, with a center piece of Battenberg having an embroidered center. The wall paper being blue and the wood cherry, I shall use pink, white and red geraniums if I am fortunate enough to have them at Thanksgiving time. [Here is where Pacific Coast people have the edge on our eastern friends! —Ed.] I always aim to have the decorations simple and the table neat, and I pay especial attention to seeing that the meal is well cooked.

Vegetable Soup.—Rub one can of tomatoes through a sieve and add a few very thin slices of Irish potato, two teaspoonfuls of boiled rice, one teacupful each of finely chopped cabbage and celery, one pint of boiling water and one chopped onion. Put this on a granite, iron or porcelain pot, and boil until the cabbages and potatoes are done. While this is cooking heat one quart of fresh milk to boiling point and pour it into the soup, while hot, just before serving. Care must be taken or the milk will curdle. Add a teaspoonful of drawn butter, a pinch of tumeric and pepper and salt to taste. Water may be used instead of milk if preferred, and the onion may be omitted. Serve hot with oyster crackers, cucumber pickles, tobasco sauce and fresh celery.

Roast Turkey.—Dress the turkey the day before, but do not let it stand in salt water. Wash thoroughly and salt well. In the morning wash again and let it drain for half an hour before putting it in the pan. Then put it in a double pan that is one-third full of hot water. Place a cover on it and cook on top of the stove slowly until the turkey is tender, then prepare the dressing as follows:

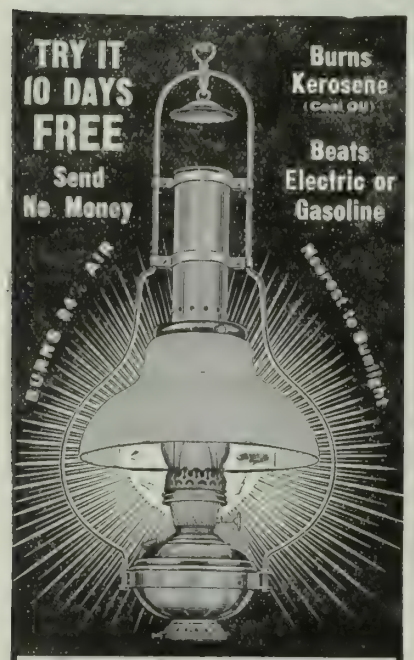
Turkey Dressing.—One quart of very fine cracker crumbs; one quart of fresh oysters with just enough of the liquor of the oysters to moisten the crackers well. Season with salt and pepper, stuff the turkey and put it in the oven to brown. To have the turkey very crisp and brown, the oven must be quite hot, and the turkey must be well done before it is put into the oven.

Another nice dressing is made with one quart of wheat bread crumbs, though I prefer cold biscuit softened with the water in which the turkey has been cooked. Season to taste with pepper, salt, onion and sage. I use the dressing when I have baked oysters for dinner. The turkey is much better steamed than roasted in the oven. I baste frequently.

I hope no reader will be as green as the writer was at one time. As an excuse for my ignorance, I will state that it was before I was a housekeeper. I was visiting at the home of an aunt and she asked me to baste the turkey for her. Being a dressmaker, the word "baste" suggested the needle to me. I got a needle and threaded it and said to my aunt, "I think you will have to show me how to baste the turkey." She did, and I have never forgotten how.

Cranberry Sauce.—I prepare this in two ways, but the better way, I think, is to put them in a bright tin pan and boil just enough to cause them to burst, then sweeten and let them remain on the stove until the sugar dissolves, then remove and allow them to cool. Or, they can be cooked until done and strained through a sieve, then add the sugar and set on the stove until it has dissolved.

Chicken Salad.—Boil two chickens until very tender. Remove the bones and chop the chicken, but not too fine. Chop one head of cabbage and one bunch of celery fine. If you cannot procure fresh celery, the seed will answer. For the dressing I use the yolks of eggs left over from bak-



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Mr. F. A. Chamberlain of Merced, Cal., arrived in S. F. Wednesday afternoon, driving a Mitchell Light Four from Boston, Mass., leaving there Steptember 4th.

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Merry Xmas

Comfort for everybody—a gift that is useful from cellar to garret. Be sure and mark down on your Xmas list a

PERFECTION OIL HEATER

Father uses it to warm the bathroom for shaving. Mother sews beside it. The children dress by it. A practical gift.

Dealers everywhere

Write for booklet, "Warmth in Cold Corners."

Standard Oil Company
(California)
SAN FRANCISCO

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ing white cake. I am not particular how many I have, as this dressing will keep many days, so if I have some left it makes no difference. Beat the yolks very smooth as if for cake. Add either butter or olive oil—I prefer the oil. Put the oil or butter in the eggs and beat before adding the vinegar. Season with one cup of vinegar, two teaspoonfuls of mustard, black and red pepper to taste, one tablespoonful of salt. Mix all the ingredients together, set in a pan of boiling water and stir while cooking. When thick remove from the stove and add vinegar to thin it if necessary.

Boil six eggs very hard and slice into the chicken salad. I never put the cabbage and celery into the salad until about an hour before using, as they are not so crisp if put in earlier.

Baked Oysters.—One quart of fresh oysters, one can of cove oysters. Two hard boiled eggs. One pint of cracker crumbs. One pint of sweet milk, or enough to soften the mixture well.

Halve the eggs and place the empty whites in a baking dish. Mash the yolks very fine, season with pepper and salt, mix with the cracker crumbs, using the liquor from the oysters to moisten them. When thoroughly mixed, add the oysters and a pint or more of milk. Pour over the halved eggs and set in the oven to bake. Do not let it bake too long, about fifteen minutes being a sufficient time. Before putting in the oven cut a large slice of butter into small pieces and place on top of the mixture. Oysters are very fine prepared in this way.

Squash.—Boil the squash until tender, mash, season with sugar, butter and cream, and set in the oven to brown.

Cream Chocolate Cake. — Any white cake recipe will do for the cake part and then ice as follows: Two cups of granulated sugar, with sweet milk enough to thoroughly moisten. Set it on the back part of the stove until melted and then let it boil until it will drop from the spoon. Beat until cool and thick enough to spread on the cake. At the time the icing is put on the stove put one square of baker's chocolate into a saucer and place over a tea kettle of boiling water. Spread the icing on the cake and when it is cool spread the chocolate on the icing.

Ice Cream.—To make one gallon of ice cream, take one-half gallon of pure cream and one quart of morning's milk. As I use cream from Jersey cows, the pure cream is too thick. Use plenty of sugar, for the sweet taste is not so strong when frozen. Four teacupfuls is usually enough to three quarts of cream. Beat the white of one egg very light and put it in before beginning to freeze. Flavor to taste.

At last serve the salted almonds and the cheese, and season the whole with some appropriate stories.

"Tim," inquired Mr. Riley, glancing over the door of the postoffice, "what is the meanin' of thim letters, 'MDCCCXCVIII?'" "They mean eighteen hundred an' ninety-eight!" "Tim, don't it sthrike you thot they're carryin' this spellin' reform entoirely too far?"

Plainly Evident.

Mrs. Lovewett (at 2 a. m.) — Where have you been?

Lovewett—Just fell in wiz an old frien' m' dear.

Mrs. Lovewett—Fell in, eh! I believe you. You're soaked.—Chicago News.

RHYMES TO REMEMBER.

When the fays send a baby from Fairyland
They tuck three things in his tight-shut hand;
I can't see them, neither can you,
But Nursey says it is perfectly true;
There's a box of Patience, a bottle of Tears,
And a nice mixed package of Hopes and Fears.
The bottle of Tears very soon runs dry,
For you don't need Tears when you've grown up high.
Of course, there's a lot of Hopes and Fears,
For they've got to last for a good many years.
But there's most of the Patience, far and away,
For you've got to use Patience every day.

—Little Folks.

Mr. Bacon: "That Mr. Crossley, who called last evening, is a self-made man." Mrs. Bacon: "Too bad he couldn't have made himself a little more agreeable."—Yonkers Statesman.

The captain of a "boys' brigade" in an English parish addressed the corps on the subject of the death of a prince, and, in ending his sympathetic remarks, chose an appropriate hymn to close the service. "And now," he said, "let us sing these lines in solemn silence!"

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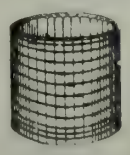
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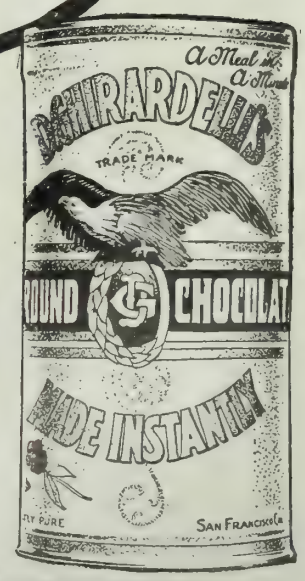

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The Markets.

(Unless otherwise noted, prices quoted are f. o. b. San Francisco.)

San Francisco, Nov. 11, 1914.

WHEAT.

The northern market continues active, and prices have again advanced. This has resulted in much higher prices in the local marget, as offerings here are not heavy, and buyers are covering their requirements.

Cal. Club, ctl.	$1.90@2.00
Forty-fold	2.00@2.05
Northern Club	1.90@2.00
Northern Blue'm	2.10@2.15
Northern Red	1.95@2.10

BARLEY.

There has been quite an active movement of barley in the country for the last week, and buyers for local as well as export account are taking more interest. This has brought higher prices for both shipping and feed grades on the spot.

Brewing & Ship'ng	$1.20 @1.25
Choice Feed, per ctl.	1.17½@1.22½

OATS.

While there is quite a firm feeling in the north, the local trade in this line is not especially active, and red oats are hardly as strong as last week.

Red Feed	1.45 @1.50
Seed	1.65 @1.90
Gray	Nominal
White	1.55 @1.60
Black Seed	1.75 @2.25

CORN.

There is very little movement of eastern grades. White Egyptian has stiffened, though there is a good deal quoted, thongh there is a good deal of inferior stock offered that will not bring the figures quoted.

California Yellow	Nominal
Eastern Yellow	$1.80 @1.85
Eastern White	Nominal
Egyptian White	1.67½@1.70
Milo Maize	1.65 @1.70

RYE.

Rye, per ctl	Nominal

BEANS.

Bayos are a little firmer, other descriptions being unchanged. The general situation in the valley has developed a little easiness, but the local market still has every appearance of firmness. There is no very heavy demand, but inquiries are of fair volume and are keeping up very well. Owing to lack of money, buyers in some quarters have been operating on a smaller scale than usual, and some growers are getting anxious to sell; but this has so far had no serious depressing effect on values. The eastern demand for limas is picking up, and prices are firmly held.

(On wharf.)

Bayos: Cal. per ctl.	$4.75 @4.85
Blackeyes	4.00 @4.25
Cranberry Beans	3.65 @3.75
Horse Beans	3.90 @3.50
Small Whites	3.90 @4.10
Large White	3.75 @4.00
Limas	5.25 @5.30
Pea	4.25 @4.50
Pink	3.00 @3.10
Red Kidneys	5.00
Mexican Red	5.25

SEEDS.

Offerings of alfalfa are increasing, and the price has been shaded a little. Canary is offered in limited quantity, at rather high prices.

Alfalfa	16 @17 c
Crown Mustard, per lb	Nominal
Canary	10 @12½c
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Cal. Family Extra	$6.60@6.80
Bakers' Extras	5.50@6.00

HAY.

Local offerings have increased a little this week, but the market is getting into somewhat better shape, with a slight advance in prices for the better grades. There is a good demand for fancy lots, and most of the arrivals are of poor to medium grade. Some effort to sell on the part of country holders is still reported, and the local trade is very cautious about buying ahead of requirements. Good alfalfa from the river district is pretty well cleaned up, but considerable imperfectly cured hay of the last cutting is coming in, and is moving on a stock hay basis.

No. 1 Wheat, or Wheat and Oats	$9.00@11.00
do No. 2	6.00@ 8.50
Barley	5.00@ 7.50
Tame Oats	6.00@12.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.00
Stock Hay	4.50@ 5.00
Straw, per bale	30@ 45c

FEEDSTUFFS.

Bran has been coming in quite freely of late, and is considerably lower, with a corresponding decline in shorts. Rolled barley has been marked up a little, and oilcake meal, which was out of the market is again appearing.

Alfalfa-Molasses Meal, per ton	$19.00@20.00
Alfalfa Meal, per ton	14.00@15.00
Bran, per ton	26.00@27.00
Oilcake Meal	33.00@34.00
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	25.00@26.00
Rolled Oats	32.00@33.00
Shorts	29.00@30.00

VEGETABLES.

Arrivals of tomatoes show a marked increase this week, and the market is fairly flooded, leaving a good-sized holdover from day to day. The best of the offerings are bringing poor prices, and unattractive lots are extremely cheap. Easiness is also apparent in several other lines, chili peppers, cucumbers and eggplant all being lower. String and wax beans show a wider range, the best lots being a little higher, while limas show less strength. There is very little green corn left, and prices have advanced sharply. Summer squash and okra are also higher. River celery also shows a slight advance. Some southern lettuce is coming in, and finds a fairly ready market as quoted.

Green Peppers, bell, lugs	35@ 40c
Green Peppers, Chili	30@ 40c
Carots, per sack	30@ 40c
Tomatoes, lugs	15@ 35c
Beans, Wax per lb	2@ 4c
String	2@ 4c
Lima	3@ 4c
Cucumbers, lugs	30@ 55c
Eggplant, lugs	25@ 50c
Green corn, sack	1.50@ 2.00
Summer Squash, box	50@ 75c
Cream Squash, box	30@ 40c
Okra, box	40@ 50c
Celery, doz	20@ 25c
do crate	1.00@ 1.75
Sprouts lb.	2@3½c
Lettuce, southern, crate	90c

POTATOES AND ONIONS.

The only quotable change is on garlic, which is rather easy at a decline. Some imported stock is offered considerably below the local quotations. The local trade in potatoes and onions continues on about the same scale as for some time past, with little outside demand.

Potatoes: Salinas, ctl.	$1.40@ 1.60
River Burbanks, ctl.	60@ 80c
Sweet Potatoes, ctl.	1.40@ 1.50
Onions: Yellow, sack	40@ 50c
Garlic, per lb:	10@12½c

POULTRY.

Chickens continue to come in freelly, and the market is very easy, with little demand. Turkeys are becoming more of a feature in the market, with increasing offerings of both live and dressed stock, and prices are a little lower.

Turkeys, lb	20 @22 c
do, dressed	23 @26 c
Large Broilers	20 @22 c
Small Broilers, per lb	20 @23 c
Fryers	18 @19 c
Hens, large, per lb	17 @18 c
Hens, extra, er lb	17 @18 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb.	17 @18 c
Squabs, per doz	2.00@ 3.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00

BUTTER.

The local demand is keeping about even with the recent average, and supplies are plentiful, with no shipning demand of any consequence. Values show little change, though a little firmer in the last few days.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	30	30	30½	30½	30½
Prime	28	28	28	28	28	28
Firsts	26	26	26	26	26	26

EGGS.

Nearly 900 cases of Chinese eggs have arrived this week in addition to a large lot of Chinese canned eggs, which are cutting out the local product in some classes of trade. This is making matters difficult for storage operators, besides tending to keep fresh eegs below normal. Both grades have declined materially in the last week.

Extras	52	51½	51½	51	49½	47
Sel. Pul.	42	42	40	37½	37	37

CHEESE.

Supplies are rather more plentiful, especially of Monterey cheese, which is due principally to the low prices. are steadily held, while flats are slightly lower.

Fancy California Flats, per lb.	16 c
New Young American, fancy,	16½c
Monterey Cheese	15@16c

Los Angeles dairy prices.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	30	31	30	31	32	33
Eggs	40	40	41	42	42	42
Cal. Cheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

Apples are finding a little more demand in the local market, but this is due principally to the low prices. Supplies are excessive, and in the absence of important shipping business the accumulation tends to increase. In other lines the demand is rather light. Grapes are easy, with large supplies, much of the stock being in unattractive shape.

Cranberries, bbl	$8.00@ 8.25
Huckleberries, lb.	6@ 8c
Strawberries, chest	3.00@ 5.00
Raspberries, chest	5.00@ 7.00
Apples, Newtown Pippin	50@ 90c
Belleflowers	40@ 65c
Spitzenberg	50@ 90c
Gravenstein	50@ 1.00
Pearmain	50@ 65c
Jonathan	40@ 75c
Crabapples	25@ 50c
Quinces, box	25@ 40c
Pears, box:	
Winter Nellis	1.25@ 1.50
No. 2	65@ 75c
Other varieties	35@ 75c
Figs: Black, double layer	1.00@ 1.25
Pomegranates, box	50@ 1.00
Persimmons, box	50@ 80c
Casabas, doz.	25@ 75c
Grapes, Malagas, crate	65@ 75c
Tokays, crate	40@ 50c
Black	50@ 75c
Cornichon	50@ 60c

DRIED FRUITS.

Current business shows little activity in most lines, and values are rather unsettled, as some holders are getting anxious to sell. Business done below the level of current quotations, however, is of too small and scattering a nature to have any tangible effect on actual values. There has been a little export demand for prunes of late, and the trade is hoping that business in this line will pick up. Some benefit will no doubt be derived from the French embargo on exports, which has already brought a steadier feeling. There has also been a little export inquiry for apricots and peaches, though little business has developed, and the local demand is light. A good many peaches, in fact, are being bought at a lower level in the country. Figs are firm and well cleaned up, while apples get hardly any attention. There is a good consuming demand for dried fruits in the east at present, which should re-

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TRADE MARK REG'D DEC. 6, 1898 NO. 32212

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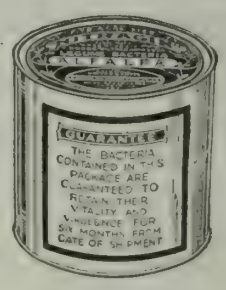

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sult in more activity here before long.

Evap, Apples, 1914	4 @5 c
Apricots, 1914	6 @9 c
Figs: White, 1914	4 c
Black	2½ @2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, 1914	4¼ @4¾
Peaches, new	3¼ @3¾c
Pears	6 @8 c
Raisins (in sweatbox):	
Loose Muscatels	4 @4½c
Seedless Sultanas	5 c

CITRUS FRUITS

The first new crop of oranges for the season left Butte county on Nov. 5th and 6th, amounting to six cars. Southern California is sending east about thirty cars daily of late Valencias. The eastern auctions are paying good prices for oranges, but lemons are lower. On the New York auction, Monday, Nov. 9th, Valencias averaged from $2.80 to $3.65 per box, while lemons sold for $1.60 to $3.60 per box.

Several small lots of navel oranges have arrived in the San Francisco market, but the offerings so far have been less attractive than the late Valencias, and prices are rather low. The general demand for citrus goods, however, is showing more life.

Oranges: Navel, box	$2.00@2.50
Valencias, box	$2.25@3.00
Tangerines, crate	75c@1.25
Grapefruit, seedless, box	2.25@2.75
Lemons, box	1.75@3.50
Lemonettes, box	1.00@2.00
Limes, case	3.00@5.00

NUTS.

The nut market appears to be in rather chaotic condition, with divergent reports in various qarters. It seems practically impossible to realize the Association prices on either almonds or walnuts, and a great many scattered lots are being pressed for sale, with very little demand. Some of the leading handlers, however, say there is no oversupply of almonds, except in the IXL variety; but sales of hardshells are reported at 5 to 8c., and local shellers seem to be filled up. It now appears that the French embargo on exports does not apply to walnuts already booked, but it is still believed that the holiday supply from that source will be short. The local market is hardly as weak as it was a few days ago.

(Association Prices.)

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
No. 1 Hardshell	Nominal
Budded	18 c
No. 2	12 c

HONEY.

This market is fairly flooded with both comb and extracted honey shipped on consignment, and with only a limited demand it is very difficult to make sales. Values stand nominally on about the same basis as before, as few holders are willing to sacrifice their stock, and it is believed that a better demand will develop later; but for the present it s useless to try to get these prices.

Comb: White	11 @13 c
Amber	7 @10 c
Dark	5 @ 7 c
Extracted: White	7 @ 8 c
Amber	4¼ @ 6c
Off Grades	3 @4 c

BEESWAX.

Light	31 @32½c
Dark	27½ @31 c

HOPS.

1914 crop	8 @10 c

LIVE STOCK.

Hogs seem to have reached bottom for the present, and prices are a little stronger than last week. Other lines are unchanged, values being firmly maintained.

Steers: No. 1	6¾ @ 7 c
No. 2	6½ @ 6¾c
Cows and Heifers: No. 1	5¾ @ 6 c
No. 2	5¼ @ 5½c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½ @ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
225 to 300 lbs	7¼c
100 to 225 lbs	7¾c
Prime Wethers	5½ @ 6 c
Ewes	5 @ 5½c
Milk Lambs	6¾ @ 7¼c

MULES

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

HORSES.

Heavy drafters, 1700 lbs. and over	$225@275
Light Dra's, 1500 to 1650	200@215
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	60@100
Delivery Horses, 1050 to 1250	1.00@ 1.10

DRESSED MEATS

Steers	10¾ @11½c
Heifers	10½ @11 c
Veal, large	13½ @14 c
Small	15 @15½c
Mutton: Wethers	11 @12 c
Ewes	10 @10½c
Suckling Lambs	13 @13½c
Dressed Hogs	13 @14 c

Publisher's Department

Our new poultry book, "California Poultry Practice," is meeting with a nice demand, especially from farm poultry-keepers. Its one chapter on diseases and remedies makes the book a necessity on every ranch. See announcement in another column.

Again we can report a good gain in our paid list of subscribers. During the past week the number of new, paid subscribers added was 293. Not only are our field men doing good work but friends of the paper are sending us new names. That the paper is being appreciated by our readers is evidenced by the returns made to the Holt Mfg. Co., of Stockton. This firm recently sent out with their house Journal a return postal card, asking their readers to indicate the farm papers they read in the order of their preference. The Pacific Rural Press headed a very large majority of the lists returned.

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$495 COMPLETE

---at a Price That Makes Horses too Expensive to keep!

Big news for you farmers! Now you can have a tractor on your place—in fact, you can't afford to be without it. $495 buys the Bull Gas Tractor. Designed by men who have specialized in tractors for years. The Big Four "30" was their creation—now the sturdy "Bull" comes because these experienced men realized that there was a demand everywhere for a small tractor. After constant work they perfected the Bull Tractor. They eliminated one of the big bull wheels and thus made unnecessary other expensive and heavy mechanism, such as in the frame, axle and differential gears. Every part of the "Bull" is easy to get at—you don't have to take the tractor apart to repair some little piece of machinery.

THE BULL TRACTOR

is a 3-wheeled machine—two run in a hard smooth furrow, one on the stubble. The front wheel guides the machine when plowing, relieving the driver of that responsibility. Has but 5 working gears (think of it!—only five). Has but one drive wheel, and but one main drive gear. Motor is two-cylinder, four cycle, water-cooled type—no better motor on the market today anywhere!

The Bull Tractor delivers 12 horsepower at the belt, 5 horsepower at the drawbar and is built to do the work of 5 horses. It travels FASTER than horses—and keeps right on going. Never gets tired. Costs nothing for harness. Costs ONE-HALF as much for gasoline as for horse feed. Never eats when not working. Never gets sick. Gets your work done better, cheaper and ON TIME! It's the BEST PAYING INVESTMENT you can make whether you have 80 or 800 acres. The "BULL" also

Pulls Plows, Seeders, Harvesters, Mowers, Drills, Discs, Grinds Feed, Saws Wood, Does Any Stationary Belt Work.

Send for FREE Booklet.

Learn for yourself why hundreds of farmers all over the country are using The Bull Tractor in place of horses. Read these few letters:

Euclid, Minn., May 11, 1914.
I have the "Bull" hard at work and it is pulling three bottoms in the stubble. I have had from fifty to one hundred visitors every day and it is the best tractor ever built, for the money.
JOHN BIEVER.

Bird Island, Minn., April 24, '14.
The "Bull" is working finely. I pulled a 6-horse road grader at an average speed of four miles an hour yesterday, and six horses can't average over three miles per hour at their best.
HEANEY & PALMLUND.

Hingham, Mont., June 10, 1914.
The Tractor that we got is working every day, plowing from four to five acres per day and eight inches deep with a harrow behind it, and does elegant work.
KIMPEL IMP. & HDW. UO.

A FEW LIVE AGENTS WANTED WIRE OR WRITE!

Doesn't this sound good to YOU, Mr. Farmer? Wouldn't you like to have a $495 BULL GAS TRACTOR on YOUR farm? Haven't you waited for years for a tractor of small price? EVERY shrewd farmer has—and now the "BULL" is offered at a price so low that no business-farmer is going to be without one! Certainly no farmer is going to feed 5 hungry horses all the time when he can get the "BULL" TRACTOR for $495—the price of a span of good mules.. Write us TODAY for our illustrated booklet. It's FREE—we'll be glad to mail it to you.

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Pacific Coast Agents
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Los Angeles, Cal.
530 Golden Gate Ave.,
San Francisco, Cal.

P.R.P. N. 12

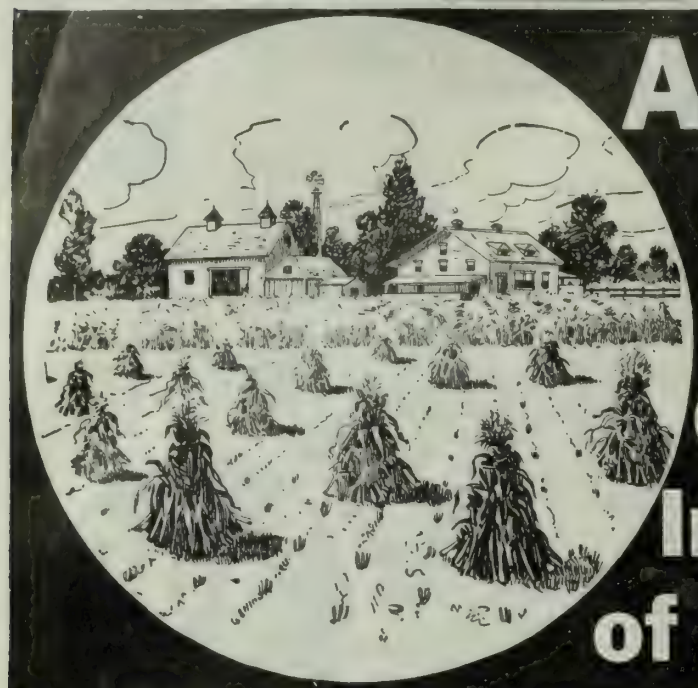
Date .. ..

HUGHSON & MERTON, INC.

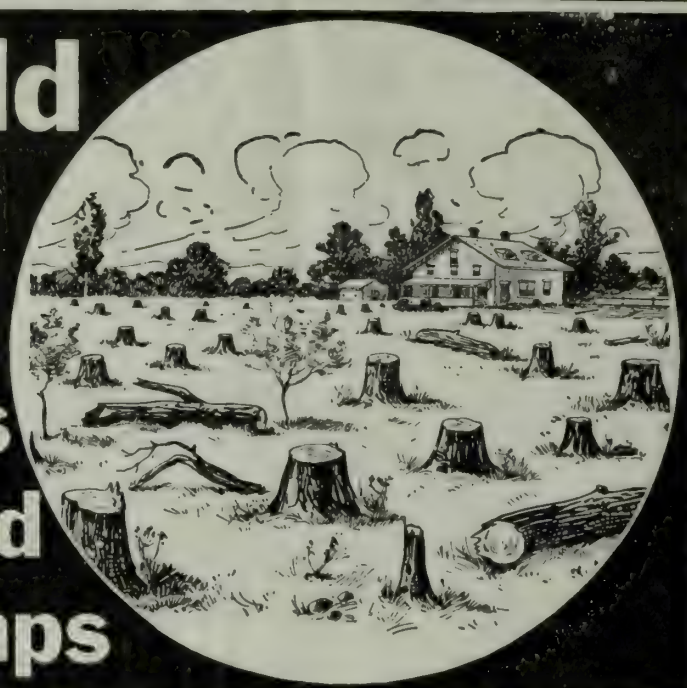
Gentlemen:—

Kindly send me at once your Free Booklet on the Bull Tractor:

Name .....
Address .....
R. F. D. .....
(Send this coupon to nearest office.)



A Field Full of Crops Instead of Stumps

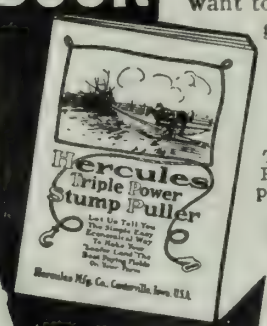


Mail Coupon Now For This Great FREE BOOK

$100.00 for Every $1.00 If You Pull Out the Stumps with the

HERCULES All-Steel Triple Power Stump Puller

Let me *prove* it to you. Just mail me your name and address so I can send you my fine book, free. Use the coupon—or just a postal. On page 45 of my book it's all figured out for you in black and white. See how much your loafer stump land—*robber* land, is costing you. See how much it decreases the value of your land. See how it keeps you from farming *all the acres you pay taxes for*. Face the facts—and know how *vitally important* it is to you to pull out every stump if you want to cash in on all your possibilities—if you want to get all the money you *should* get from your land. My book *proves* that by pulling the stumps, you can



Every Casting Guaranteed for 3 Years Against Breakage from Any Cause, Flaw or No Flaw

Make $1281 Profit the First Year on 40 Acres and $750.00 Profit Every Year After

The estimate is low. You can do even better. Remember, you plant on virgin soil when you plant where stumps stood.

An Acre of Stumps Pulled in a Day

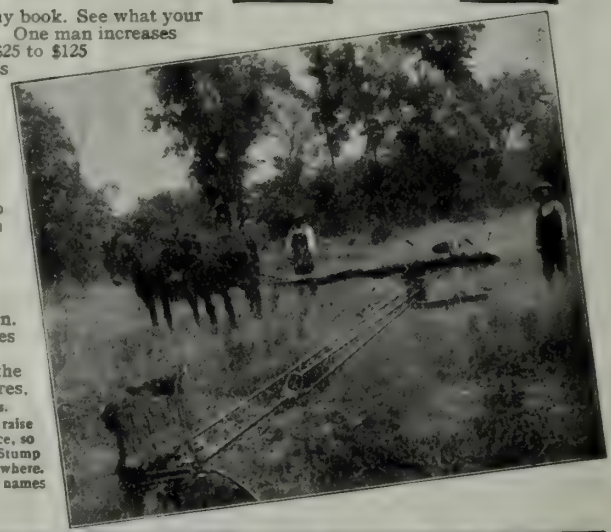
That's what *you* can do with a Hercules. And you won't have to pass by any of them. Big or small, they *can't* resist the terrific pull of the triple power. And the Hercules won't break. It gives a greater pull than a locomotive—yet the strain is so scientifically distributed over the All-Steel Hercules that we *can* and *do* guarantee it against breakage for 3 years.

My 3-Year Guarantee

If any casting of your Hercules breaks within 3 years from date of purchase, send in the broken part and we will replace it free, whether the break was your fault or the fault of too great a strain or a flaw or *anything*. Even with the great power and strength of the Hercules, it is 60% lighter than other pullers.

What Others Have Done

Read the many letters in my book. See what your brother farmers are doing. One man increases the value of his land from $25 to $125 per acre. Another makes $1000 by pulling hedge fences. Another pulls stumps for 4c each. And so on. Don't you want the facts? Don't you want to know the easiest, quickest, cheapest, safest and surest way to clear out every stump in *your* fields?



Get My Free Book and Low Price

To the first buyer in each locality I am making a very personal price proposition. If I get one Hercules in each locality, more will surely follow because of Hercules quality and efficiency and money-making advantages.

I want to hear from you. Just simply send your name and address on the coupon or on a postal. My new book is a beauty. See the real pictures, from 25 different states, of big stumps the Hercules has pulled out like you would pull weeds. I'll send the book and special price offer by return mail. I'll tell you the best crops to raise on virgin land where stumps were before. I want to get my free book to you at once, so that you can read the remarkable facts about the Hercules All-Steel Triple Power Stump Puller and how it does such splendid work making big profits for owners everywhere. Mail me the coupon or postal right now, before you forget, or take down the names and address and write me soon. Address me personally.

B. A. FULLER, President
HERCULES MFG. CO.
812 23RD St., Centerville, Ia.

Rush Coupon for Book and New Low Price

Mr. B. A. FULLER, President
Hercules Manufacturing Company
812 23rd Street, Centerville, Iowa

Dear Sir:

Please send me free book about the Hercules Triple Power All-Steel Stump Puller. Also your low price to first purchasers.

*Name*_____

*Town*_____

*State*_____ *Route No.*_____

Many More Pictures in Our New FREE Book

Vol. LXXXVIII—21 Forty-Fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, November 21, 1914 LOS ANGELES

State Library 7-1-16

Orchards from the Sierras to the Sea.

Mountain Valley Orchard in Inyo County. Young Planting on the Level Floor of the Interior. Older Orchard in Pajaro Valley Bordering the Pacific.

Kirkman Peach tree four years old. Main office, Fresno. One year Pear trees.

Mr. Orchardist:

Dear Sir: You will devote much time and money to that young orchard or vineyard you may plant, and you have a right to expect good results.

Your interests demand that your nurseryman, like your banker or doctor, be thoroughly competent, that he leave nothing undone in serving you in the most efficient way possible. On this basis we respectfully solicit your account for nursery stock. We work diligently at all the problems arising in our line.

It will interest you to pay us a visit and look over our nurseries, and see our way of eliminating poor parent trees in the orchards where budwood is secured. We will show you the largest and best equipped deciduous fruit and nut trees and vine nursery in the West, where five million thrifty selected plants are growing, also a hundred thousand fine orange and lemon trees at our thermal belt plant. We have a good supply of olives in Mission and Manzanillo varieties

It has taken twenty-seven years of consistent effort to establish our efficient nursery service. We supply you with the best obtainable and the volume of business we are doing enables us to supply you at a minimum cost.

If you can't visit us, send a list of your needs. We will send you a sample of the kinds you want.

Illustrated price catalog mailed on application.

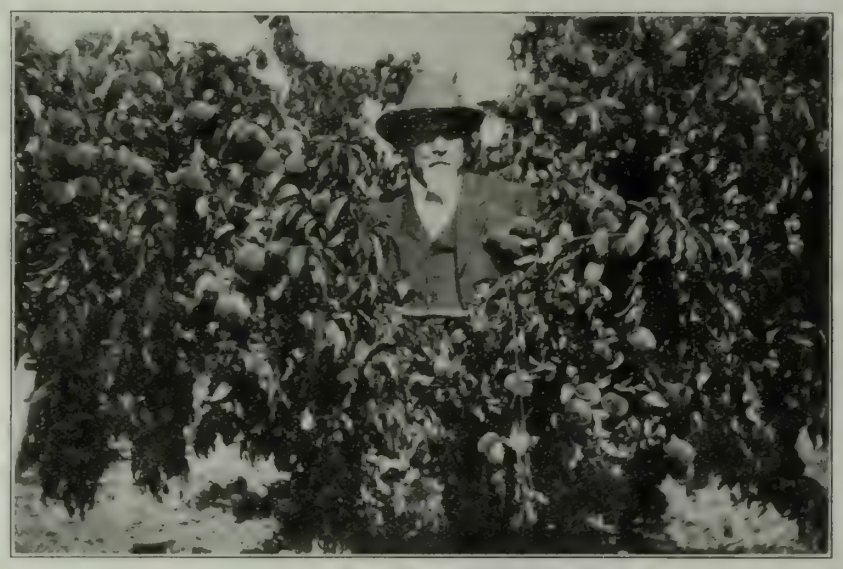
OUR SPECIALTIES

Peaches—All commercial varieties (including the New Round Tuscan, Peaks Cling, the best midsummer canning peach, and Kirkman's Early, the earliest peach grown in California).

Almond **Apple**
Apricot **Cherry**

Fig (Smyrna, Adriatic and the famous Kelsey black Mission).

Nectarine **Quince**
Pear **Walnut**
Plum **Grape Vines**
Prune **Citrus Fruits**
Olives
Ornamental and shade trees



W. T. Kirkman, Sr., Amidst His Latest Discovery.

A delicious yellow freestone, similar to midsummer freestones; but ripening October 5th to 20th.

"Kirkman's Early" Ripens Six Months Earlier

than this peach. Customers who planted **Kirkman's Early** three years ago brought ripe fruit to the market on May 16th of this year.

Mr. Kirkman, Sr., is a veteran nurseryman. He started the Kirkman Nurseries in the San Joaquin Valley in 1888. For fifteen years previous to that date he raised nursery stock in Arkansas.

Hauling twenty thousand freshly dug fruit trees (about seven tons) from the nursery to the packing yard. This is a special built, long body truck for nursery work. The bed is seventeen feet long behind the seat. Note the heavy canvas covers, which eliminate danger of damage by wind or sun while in transit.

ADDRESS

Kirkman Nurseries,

2023 Tulare Street, Fresno, California

The Pacific Rural Press

San Francisco | Saturday, November 21, 1914 | Los Angeles

Shall California Grow More Fruit?

[By the Editor.]

In December, 1875, this writer attended his first meeting of California fruit growers. He was a tenderfoot lad imported to make the Pacific Rural Press grow, and his first concern was, of course, to get acquainted with his constituents and see what he could take away from them to give the Rural something to grow with. It was a meeting of some dignity, and about fifty, as we remember, came from different parts of the State to attend it. They were the pioneer fruit growers and nurserymen of California—serious, alert, rather sober-sided men, and all of them are now, presumably, in heaven: for their earthly lives certainly looked that way.

The question at that meeting was "Shall California Grow More Fruit?" Much fruit had rotted on the ground the previous summer. About 300 carloads had gone east by rail—mostly at a loss to the shippers. Five years before an enthusiastic Sacramento grower and shipper, seeing the cars of fruits taking readily to the newly opened overland line, had exclaimed, in prophetic frenzy: "It shall not be long before we can send 1000 carloads a year." It was the limit of his optimism and it brought him rebuke, for five years had passed and fruit-shipping had been getting no better very fast. Evidently he was a vain dreamer! The meeting of 1875 reached the conclusion that California was growing too much fruit! And yet the shipments of California fruits and fruit products filled more than 120,000 cars in 1913 and we do not know for which to blame the pioneers more: for their faint-heartedness or for the limitations of their great prophet!

On Hill or Valley there is a Fruit for Every Reasonable Condition in California.

About 1890, this same kid, then having gained some age and pedalistic hardness, attended a great convention of viticulturists at which the condition of the newly developed raisin industry gave some concern. A valley viticulturist of much prominence demonstrated by figures that within five years the California raisin product would exceed the raisin consumption of the United States: that planting should stop, and that public-spirited vineyard-owners ought to pull up some of their vines for the general good! At that date the raisin product was 19,000 tons: in 1912 the product was 92,000 tons, of which about 10,000 tons went to foreign countries—and the raisin industry now looks more promising than ever.

About 1905 this same kid, still gaining in age and in the positivism which adheres thereto, attended a great convention of fruit growers at which a prominent fruit grower argued that fruit planting should stop because the acreage had already exceeded the limit from which it could be reasonably expected to sell fruit. Some were disposed to give heed to the warning until the report gained circulation that this warning was rather too widely altruistic, because the dispenser of the warning had a frown on the side of his face which was turned to other planters, but a smile on the other side for his own increasing acreage.

The foregoing are a few of many experiences of this writer that pessimism with reference to the opportunities for fruit growing in California is not worth indulgence. This conclusion is broadly based upon the relation of California conditions and adaptations to those prevailing elsewhere on this continent. No matter how great fruit growing may become elsewhere in North America it can never include the fruits which are our chief lines in fruit production, preservation and trade. In fruits of less importance with us, and which we may share with other regions of the continent, we have advantage in a ripening season both in its earliness and its lateness, which our competitors cannot enter upon. We also have, in nearly all the fruits we grow, certain aspects and qualities of commercial suitability which render our product distinctive and serviceable in the world trade. These are fundamental affairs which will lift our products above direct competition — no matter what other parts of the country may achieve. We have also other fundamentals of safety, not the least of which are the California spirit of enterprise, the California mastery of capital, and the free use of it in promising production and the cosmopolitanism of California producers, packers and traders which not only dares to attack world-problems of distribution but knows how to tackle them economically and successfully.

Of two concrete things we are quite sure. One is that the acreage of American fruits relative to acreage which can support only consumers of fruits is smaller than is generally known. Why did California rise so quickly to the first place among the States not only in aggregate of product but in the case also of every single fruit, except apples and berries? It was not alone because we planted so rapidly, but because the others planted so slowly or not at all—except in family orchards, and they make no impression on the landscape nor on the markets. During the last decade this writer has gone to and from California by every overland

(Continued on page 499.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

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Frank Honeywell - Publisher and Manager
W. H. Schrader - - Advertising Manager
D. L. Schrader - - - Subscription Manager
R. E. Hodges } - - - - Assistant Editors
J. C. Loomis }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., November 17, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka.....	.62	6.87	6 45	66o	38o
Red Bluff...	.01	1.57	3.87	74	40
Sacramento.	.00	1.08	2.36	72	38
S. Francisco	.01	.48	2.61	68	48
San Jose...	.00	.98	1.98	70	34
Fresno.....	.00	.58	1.47	76	40
Indep'ndence	.00	.40	1.34	70	30
S. L. Obispo.	.00	.20	2.49	78	40
Los Angeles.	.00	.49	1.46	76	52
San Diego..	.00	1.90	.91	66	50

The Week.

This issue of the Rural Press, marking the practical beginning of a new crop-year for California, multiplies its pages that it may more adequately serve the agricultural production and trade of California during a year which is reasonably expected to be the greatest the state has ever seen. The additional burdens of increased surplus food production for the world and of home-supply of products and manufactures, for which we have been largely dependent upon the industries of other countries, are stimulating American effort to meet the emergency. It is quite clear that in the future we shall do more for the world and for ourselves than hitherto. California will eagerly assume her share of this national impulse and action and, in addition thereto, feels the strong force of obligation and inclination to justify her own reputation as a young state of great natural capacity and human capability to fitly welcome the world-people during the year of her great expositions and to manifest to thousands of them a field for investment producing-effort and homemaking, than which there is no better on the globe. To better participate in this great effort of the commonwealth of California, the Pacific Rural Press, which has been laboring for 45 years to secure for itself competence to lead and to guide in farming affairs, now increases its scope for the work which the occasion demands and in which it hopes to receive the earnest support and practical help of all its thousands of interested, appreciative and kindly disposed subscribers.

The Planting Season.

As betokening the enlarged effort which we propose to make during the coming crop-year, emphasis is largely placed in this issue upon things related to the planting season. In a way it is hardly justifiable to speak of any fraction of the year as particularly the planting season, for owing to our winter as a growing season and our summer consisting of seed time and harvest, commingled by our great variety of naturally moist land and mastery of irrigation, there is no month of the year which is not a planting season for something somewhere in California. Still, the beginning of the rainy season, which brings the dormant season for the great range of deciduous trees, shrubs, and vines, and which moistens the earth for the seed of all hardy field crops, is the greatest planting time in California and corresponds to the spring time of wintry climates in that respect. Therefore, it is now the time to select tools to break up land and lay a proper foundation for planting and for summer tillage: the proper time to buy nursery trees and seedsmen's supplies and not to postpone action on these matters, although, owing again to the advantage of the California conditions of temperature and moisture, it is the beginning of a plowing and planting season which covers several months. This leaves no excuse for not beginning early and working systematically and well. When one has, fortunately, plenty of time for a job it is not an excuse for being late; it should be an added inducement for beginning early and profiting by the full advantage thereof. This reflection applies particularly to preparation for fruit planting, and the assurance, which is boldly proclaimed on another page, that California still has her great future in fruit production in front of her, should be an inducement to those alone who plant wisely and well and have the means and energy to pursue the business in the same way all through. To those who neglect this essential condition of success there will be disappointments in the future as there have been in the past.

Fruit Growers for Sound Development.

The great convention of fruit growers in Los Angeles last week was itself a most significant opening of the planting season. References to the convention will be found on other pages. By the volume of the attendance and by the spirit of the transactions, the assembly testified to the warrant and relevancy of our confidence in the future of our fruit industries. For, really, great as our soil, climate and other natural advantages are, our leading industries are founded upon the quality of the men and women who are giving their lives to their development and progress. The people who are actually in these industries are a great promotive force along sound conservative lines, and when a thousand or two come together, as they did last week in Los Angeles, there is really something doing for present and future prosperity. It is not from them that the undertakings which fall into financial straits have come. They have not over-capitalized the figurative warm air, rosy sunshine and water, which common promoters have been doing to their own embarrassment and sometimes to the hardship of others. They use real heat and natural sunshine and actual water, and have established a legitimate productive industry which is sound and dependable and reasonably profitable and thrives by real progress and not by booming. And they are always active for efforts in which they can see real development for the state. Last week we stated that we would not be surprised if commendable propositions for wisely placing people on land in this state should soon come to light. Surely enough it has thus soon appeared and naturally the appearance is under the auspices of the California fruit growers. At last week's convention Col. Weinstock urged that California needs a system of state colonization like that which has put Ireland on its feet and had marked success in Australia. "The state should establish picked colonists on good land, allow them easy terms of payment and give them the services of a resident trained agriculturist," he said. Colonel Weinstock, who is a member of the American Commission on Rural Credits, urged that the Legislature formulate laws putting the system into effect. This is a matter which we shall have more about later. We are glad that it comes from the Fruit Growers' Convention.

Our Weekly Lesson in Finance.

Speaking about rural credit, which means easier money for sound producing enterprise, reminds us that our duly appointed teachers of agriculture, the bankers, have promptly issued their weekly lesson and we haste to place it before our readers. Meeting in Philadelphia last week the Investment Bankers' Association of America authorized the announcement "that the future holds forth unusual promise and that the low ebb of depression is past." Seeing that the depression, according to President Wilson, was only psychological, and seeing also that this is about the only spot on the world where good times can possibly perch, we must believe that the bankers are right, though they may be a little late about it. With reference to the new national banking law, which is now in effect, it was said: "It will have a tendency to stabilize interest rates and will go a long way toward eliminating serious credit disturbances. It will place the legitimate operations of the commercial, industrial and agricultural community on a better and safer basis, less subject than heretofore, to disturbances caused by factors outside of their respective spheres of activity." This last we take to be wildcats and those who nestle in their fur and claw at honest men and honest money.

Although this will help bankers to discriminate between the real and the unreal in security, they will still be serious limitations on the real because reserve bank money seems to be limited to six-months paper and cannot be loaned for land improvement, which is regarded as "merely investment." However, it will serve a good purpose for loans "for agricultural purposes or based on live stock" when the turn-over can be made in half a year. Such a hurry-up live-stock business seems to be characteristically American, for in Europe the needs of a live stock crop were the chief ground in granting two years' credit instead of one year, which might do for a grain crop. Still, the agitation seems to have started the financiers on the move and they may find a way later to run a few stations on the assistance of farming. That is the way it worked abroad and we may get a rational farming view of it here also after a while—especially since the bankers are drawing up their chins a little.

Agriculture the Great Pacifier.

A traveling friend of the Rural, now in a haven of safety in Rome, sends a copy of L'Italia which announces a meeting of the International Institute of Agriculture on the last of October. L'Italia is neither a farming nor a commercial journal, and it is therefore more significant that it comments upon the meeting of this world-agricultural institution as the only place in the world where one can find representatives of all the warring nations and of the neutral nations in peaceful and altruistic converse and calculation about the world's food supply. Though some of the regular national delegates are on the firing lines their places are taken by men whom Mars has no use for and the representation prevails. This is a practical demonstration that, though great philosophies failed to preserve the world's peace last summer, there is still a chance that agriculture may bring and hold them together. It is a wider application of the old truth that though diplomats may quarrel like cats all day in their conference-cabinets, they can smile benignly upon each other when they come to discussing the banquet-menu in the evening. Why not work this old truth for all there is in it?

And that reminds us that the Sacramento Chamber of Commerce last week did credit to itself by approving the proposition of David Lubin as embodied in the resolution presented by Congressman Goodwin of Arkansas, which provides for the appointment of a national marketing commission composed of twenty-nine members fifteen of whom shall be farmers, and fourteen others. It narrates that inasmuch as previous attempts of non-governmental agencies have failed, it is high time that a governmental agency be established to aid in organizing the agricultural resources of the commonwealth and have something to do with control of the prices. And when that agency gets at work in this country, the next thing will be to connect it with an international movement of the same kind and then we shall have the working and peace-loving in all countries sitting at such a banquet of good things that the thunder of militarism will produce nothing more alarming than the rattle of raindrops on the roof. The peace-producers have been trying to convert the world from war by pounding on the head and the heart—they ought to hit the world in the stomach. And really, that has always been the most effective diplomacy.

The Labor Unions Moving That Way.

If the food-producers of the world neglect their opportunity to close the career of militarism and despotism, the labor unions will seize their chance. At the great convention of the American Federation of Labor in Philadelphia last week a resolution by President Samuel Gompers which attracted much attention was this: "Let the American Federation of Labor, in view of the general peace congress which no doubt will be held at the close of the war for the purpose of adjusting claims and differences, hold itself in readiness to call a meeting of representatives of organized labor of the different nations to meet at the same time and place, to the end that suggestions may be made and such action taken as shall be helpful in restoring fraternal relations, protecting the interests of the toilers and thereby assisting in laying foundations for a more lasting peace."

Think about these things. It will need the introduction of some new forces probably to get the world really and finally right side up. The constituted representatives of the penitent nations will no doubt be working overtime to maintain the status quo. What the world really seems to need is the overthrowing of a few thrones and ruling classes that truly representative government may prevail.

Queries and Replies

Querists must give name and address.

Rust Fungus.

To the Editor: I am mailing you some leaves from my apricot trees. The under sides are covered by a red substance which does not look good to me. Please give it a name, and tell what effect it has for good or evil on trees or fruit, and how to get rid of it, if it is an evil to tree or crop.—G. W. B., Hemet.

The reddish postules to which you refer are the breaking out of a rust fungus, puccinia pruni. It is named because of its discovery on the plum, but it affects the apricot also. It has sometimes done some injury to nursery stock in the plum line, but usually is so rare and appears so late in the season that the work of the leaf is largely done and spraying is not undertaken. The Bordeaux mixture is the proper spray if it should appear early enough to injure the plant. You will have to watch and see what its behavior is under your conditions. As a rule, its appearance is negligible, and as late this does not call for treatment.

Roots for Almonds.

To the Editor: I wish to plant about 10 acres in almonds in a year or two, perhaps three. Are almonds on peach roots better than on almond roots for this particular section of the State? I wish to prepare my own trees. If peach roots are prepared are any particular kind of peach seeds preferred, When should they be planted?—P. N. G., Modesto.

The root choice does not depend upon the section: it depends upon the soil in any section. The deeper, sandier and drier your soil is the better the almond root will be for your almond trees. If the soil is good peach soil, the peach root will do well, but we do not prefer it. In the fall two years before you wish to plant the trees, put any good, hard non-splitting peach pits in sand for a while, keep moist but not wet, and plant out the sprouting pits in nursery row. Bud the seedlings the following July and plant the trees as soon as they have made one season's growth on the buds. All the details of this work are given in our book "California Fruits," which was written to help beginners in that line.

Transplanting Onions.

To the Editor: I expect to raise about three acres of onions next year, and following instructions given in "California Vegetables," I sowed the onion seed thickly in a bed about the first of September, expecting to transplant them in February (as you recommend in the above-mentioned book). However, the plants are already the required six or eight inches in height and are beginning to be badly crowded for room. The ground I expect to transplant them in is situated in the Feather River bottom and is of a rather light, sandy character. Will it do to transplant them now, or what method would be best for me to pursue? So far as the soil is concerned as regards tilth and moisture, it is in excellent condition at present.—S. H. E., Marysville.

Transplant whenever you get a few days of moist air—that is, not in dry wind. If your land is not subject to overflow you ought to get a good early crop for the light soil will take care of the rain easily and the crop will stand considerable freezing weather.

Another Indictment for Diabrotica.

To the Editor: I am sending you under separate cover some bugs which have been making holes in the pods of my string beans. What can I do to get rid of them?—A Subscriber, Arboga.

The insect is Diabrotica soror, about which we told nearly all we knew in the Pacific Rural Press of October 17, page 371. It is often called the "black-spotted green ladybird," but it is not a ladybird at all and does things which would cause a ladybird to blush—and do it easily, because ladybirds are prevalently reddish and none of them green.

California Grass-Nut Pasturage.

To the Editor: Herewith am sending you some bulbs for identification. They grow very thickly in a clay-adobe overflow land, and have a remarkable forage value for hogs after a hay crop; they are locally called "grass nuts," "wild onions," etc.—F. C. N., Santa Rosa.

The bulbs submitted by your correspondent belong to the plant known botanically as Brodiaea laxa, and known in common parlance as Grass Nuts. The stems which grow from these bulbs in the spring of the year become one or two feet high, and each is topped with a cluster of ten to twenty-five showy purplish flowers. The leaves are very narrow and slender, and grow only from near the base of the stem. The so-called bulb is, strictly speaking, a corm, that is a thickened underground stem structure.

The Grass Nuts grow abundantly in adobe fields of Western California, and also on adobe hillsides where they are known, especially in Mendocino county, as Highland Potatoes. The corms are often exceedingly numerous in the soil. One investigator estimated that two hundred of them would often occur in a single square foot of ground. Their value for stock and more especially for hogs is therefore much greater than one would ordinarily suppose. The corms are sweet and since they contain considerable quantities of starch and sugar are especially valuable for the fattening of animals.

The Indians of Northwestern California are well acquainted with the value of Grass Nuts, and gather them in considerable quantities. They are sometimes eaten raw, but more often they are first steamed in pits.

There can be no danger in connection with the utilization of Grass Nuts, either by man or by animals, unless bulbs of the Death Camas should be eaten by mistake. These, however, are not solid as are the Grass Nut corms, but consist of concentric layers as in the common onion. Death Camas may also be readily distinguished by its flowers, which are white and are arranged in elongated panicles instead of rounded clusters, as in the case of the Grass Nuts. Furthermore, Death Camas does not occur in heavy clay soil, but is restricted to the moist swales of meadows and stream banks.—H. M. Hall, Professor of Economic Botany, University of California.

Fruit Varieties By Counties.

[Tabulated for the PACIFIC RURAL PRESS.]

While the varieties commercially grown in a county prove that they are adapted to the climate and soil of certain portions of that county, they do not always prove which are the most profitable. Varieties come and go as they are superseded by better ones and as the demand changes on the markets. The annual reports which have been made this fall by the County Horticultural Commissioners to the State Horticultural Commissioner, showing varieties commercially grown, have been tabulated to show the sections whose natural conditions are favorable for those varieties. Some commissioners did not report, some did not report in full, and of course there are variations in the judgment of the different men as to just what are "commercially grown" varieties. Absence of a fruit from these reports must not be taken to mean that it does not thrive there. The evidence is to be taken affirmatively, not negatively. Abbreviations have been chosen to be most suggestive of the names abbreviated, and are aranged alphabetically, as follows:

COUNTY	Almonds	Apples	Apricots	Cherries	Figs	Lemons	Olives	Oranges	Peaches	Pears	Plums	Prunes	Walnuts
Alameda	I.		B, B, M.	T, A, R.					C, O, M.	B, C.	J, Gr.	S, F, I,.	B, F.
Butte	N, D, Ne.	W, S, A, Bd.	B, B.	A, T.	M, A.	E, L.	M, Ma. S.	N.		B.	S, G, K.	F.	
Colusa	I, Ne, T.		R.		A.			N.	M.	B.		F, R.	F, B.
Contra Costa	N.		B.	A.						B.		F.	
El Dorado									E, O, Le.	B.	G.		
Fresno			B, B, T.		C, A, M.	E, L.	Ma, M, S.	N, V, M.	A,E,F,M,P,L,lC,eC.	B.	B, C, P. W, Da, Gr.	F, S, It.	
Glenn	Ne, I, D, T.	N, M, G, R.	M, B, H		M.	E, V.	M.	N, V.	M.	B, N, Bb.		F.	F, M, B.
Humboldt		K, B, Bl, J.											B.
Imperial									All var.				
Inyo		W, S, L.										F.	
Kings			B, T.						T, P, F, O, M, E, L.				
Kern		J, R, Ga, Wb	N, B, T		A.		M, Ma	N.		B.		F.	
Lake										B.		F.	
Los Angeles		S, J, P.	R,		C, A	E, L, V.	M, N.	N, V.		B.		F.	S.
Madera	N, I, Ne, T.	D, P, N, Bl.	R, B, T		A.				T, P, M, E, L, S.	B.	T, Sr, W.	F.	
Mendocino		J, Ba, B.								B.		F, I	F.
Merced	T, N.				M, A, C.		M		T, P, M, E.	N, B.			
Modoc		Wb, S, W, R, K											
Monterey		B, N.	R,										
Napa		G, B, J, N.	R, B.	A, T.			M, P.		M, C, T, Su.	B.		F, S, I.	F, S.
Nevada	Ne, I.	S, W, J.	M, R.	A, T.	M, A	L.	M.	N, V.	T, P, E, M.	B.	Gr, Wa, H, Gl	F.	F, M.
Placer	I, Ne, N, D, T.		N, M, R	T, A.	M		M, P.	N,	All var.	B.	All var.		
Riverside	Ne, N, D.	R, J.	R,	T, A.		E, L.	M, Ma.	N, V.	L, P, M, E.	B.	Sa, Gr.	F, S,	B.
Sacramento	D, T, N, I.	A, Al.	R, B, T.	T, A.	C, M, A.	E, L.	M, Ma.	N, V.	S, P, T, M, L, E, C,H.	B.	E,Gr,T,G,W,K,B,H.	F, S.	F, E, M.
San Benito	N, I, J.	N, P, B.	B, H, M, R	A, T, B					P, T, M, He.	B, N.		F, S, I.	F, M.
San Diego		B, P, R, W	R.			E, V, L.	M, Ma.	N, V.	E, F, L.	B, N.			
San Joaquin	T, N, I, D, L.		B, T, R, M.	A, B, T, L, Re, P.	M, A, C	L, E.	M, Ma, S, O	N, S.	All var.	B.	E,Gr,G,W,K,H,T.	I, F, R, S, St.	E, M, F.
Santa Barbara		G, B, P, N, Wb.	R,										
Santa Cruz		N, B.	R, B.			E.							
Shasta	I.	S, Ba, W.	R.	T.	M, A		M.		O, P, M, E.	B, N.	B, Gl.	F, R.	F.
Stanislaus	D, T, N.	Ar, B, A, N.	T, B	T, A.	C, A.	V.	Ma, M.	N. S.	T, P, L, O, M, E, S.	B, N.	B, Sa, K, T.	F.	F, W.
Siskiyou		P, Wb, N, J, S.	M.	A, B, C.					C, E, Ca.				F.
Sonoma	Hatch var.	G, S, Ba.	R, M	A, T, C.	M.	E, L.	Ma, M.	N.	C, M, O, T, Mc.	B.	W, B, T.	F, I, R.	F, sR.
Sutter	Hatch var.	A.	R.		A.		M.		T, P, M, H, F, E.	B.	E.	F.	M, F, B.
Tehama	I, Ne,N.	N, Ar, W, R.	B		A, C.		M. Q. Ma.	N.	M, E, C.	B.	T, C.	F, R.	
Ventura			R.			E, L.		N, V.					F, B.
Yolo	N, Ne, I, D, T.		R.		C, M.		M.		St,eC,A,Tr,O,lC,E,M.		B, W, T,sR.	F, R, S.	

Abbreviations.

ALMONDS.—D, Drake's Seedling; I, IXL; J, Jordan; L, Languedoc; N, Nonpareil; Ne, Ne Plus Ultra; T, Texas Prolific.

APPLES.—A, Astrachan; Al, Alexander; Ar, Arkansas Black; B, Bellflower; Ba, Baldwin; Bd, Ben Davis; D, Delicious; G. Gravenstein; Ga, Gano; J. Jonathan; K. King; L, Lawver; M, Maiden Blush; N, Newtown Pippin; P, Pearmain; R, Rome Beauty; Ri, Rhode Island Greening; S, Spitzenberg; W. Winesap; Wb, Winter Banana.

APRICOTS.—B, Blenheim; H, Hemskirke; M, Moorpark; N, Newcastle Early; R, Royal; T, Tilton.

CHERRIES.—A, Royal Anne; B, Bing; C, Centennial; L, Lambert; P, Paul; R, Rockport; Re, Black Republican; T, Black Tartarian.

FIGS.—A, White Adriatic; C, Calimyrna (Smyrna); M, Black Mission.

LEMONS.—E, Eureka; L, Lisbon; V, Villa Franca.

OLIVES.—M, Mission; Ma, Manzanillo; N, Nevadillo; O, Oblitza; P, Picholine; Q, Queen; S, Sevillano.

ORANGES.—M. Mediterranean Sweet; N, Navel; S, Seedling; V, Valencia.

PEACHES.—A, Alexander; C, Crawford; eC, Early Crawford; lC, Late Crawford; Ca, Carman; E, Elberta; F, Foster; H, Hale's Early; He, Henrietta; L, Lovell; Le, Levi; M, Muir; Mc, McClish; O, Orange Cling; P, Phillips; S, Salway; St, St. John; Su, Susquehanna; T, Tuscan; Tr, Triumph.

PEARS.—B, Bartlett; Bb, Buerre Bosc; C, Buerre Clairgeau; N, Winter Nelis.

PLUMS.—B, Burbank; C, Climax; Cly, Clyman; D, Diamond; Da, Damson; E, Yellow Egg; G, Grand Duke; Gi, Giant; Gr, Green Gage; H, Hungarian or Gros; J, Jefferson; K, Kelsey; P, Peach; S, Sugar; Sa, Satsuma; sR Santa Rosa; T, Tragedy; W, Wickson; Wa, Washington.

PRUNES.—F, French; I, Imperial; It, Italian; R, Robe de Sargent; S, Sugar; St, Standard.

WALNUTS.—B, Santa Barbara Soft Shell; E, Eureka; F, Franquette; M. Mayette; P. Placentia; S, Seedings; sR, Santa Rosa; W, Willson's Wonder.

ALL VAR.—All varieties.

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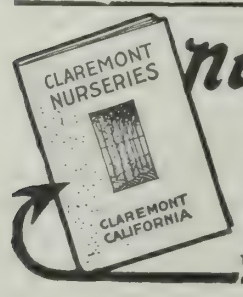

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FERTILIZER BOXING

[Written for the PACIFIC RURAL PRESS By J. E. Adamson, Pomona.]

Potash.—Much of what was said in last week's article in regard to phosphoric acid, is true of potash, with the exception of fruit production.

There seems to be no definite knowledge of the part played by potash in the production of crops of fruit, but it seems sure that if we are to produce smooth-skinned, sweet, and otherwise desirable fruit there must be in the soil a considerable quantity of this mineral salt.

Now as to the purchase of these items of our orchard expense. The present method of dealing with complete fertilizers on a percentage basis and the assumption of certain low figures for the formula leads to the use of a filler to bring the figures to the proportions we have decided must be used. For instance, take the formula 4:8:3, so often used as a fruit fertilizer. If the 4 per cent of nitrogen is taken from nitrate of soda and blood, the normal percentages of which are 15 per cent and 13 per cent respectively, and the 8 per cent phosphoric acid is derived as usual from bone meal or sulphur phosphate with 20 per cent or more, and the potash from sulfate with 50 per cent, it is evident that material carrying one of these elements must be added to hold down the percentages. About 650 pounds of blood, 650 pounds of bone and 165 pounds of sulfate of potash would contain the plant food represented in one ton of goods of the formula given above, but the weight would be less than 1500 pounds and the percentage correspondingly higher, so enough filler of some sort is added to bring the mixture up to the ton, and correct the percentages. And all this for looks, there being no value worth paying freight on in the filler.

Complete fertilizer is of course understood to be a mixture containing all three of the elements of plant food in some definite proportion, to suit some stated condition, and is made in many different combinations. The value can readily be computed by taking the values of the elements as given in the Bulletin on Commercial Fertilizers, issued twice a year by the College of Agriculture of Berkeley.

GREEN ORANGES TO THE COUNTRY.

[Written for PACIFIC RURAL PRESS.]

"The Chicago trade stalls quickly on immature oranges, but being sour, they keep longer and we can ship them out to the country trade at $1.25 to $1.75 per box," said a buyer at the Chicago Green Fruit Auction Co.'s salesroom. "Two years ago I bought three carloads that had been picked too soon on account of the frost and the cars had set two or three weeks. We delivered them in the country for $1.50 per box and made good money. Green oranges make a good example."

We wondered what luck an Exchange agent would have trying to increase California orange consumption in that "country," which meant "small towns" surrounding Chicago.

Now is a good time to devise a system of keeping accounts with your farm. Keeping account is merely a matter of forming the habit, after which it is easy

Peaches

$10,000. Worth — 400 Tons from 900 Trees in Six Years from Planting

Read this letter from Mr. C. H. Schmidt of Selma, Cal., who is shown beside one of his peach trees when they were three years old.

SELMA, CALIF., NOV. 14th, 1914.

MR. GEO. C. ROEDING,
Pres. and Mgr. Fancher Creek Nurseries,
Fresno, California.

DEAR SIR:—I think you will be interested in a brief outline of what I have accomplished with the peach trees which I purchased of you in 1908.

In the first place, the trees that you supplied me with were just the kind of nursery stock that I know Roeding invariably supplies to his customers. I am only one of the many boosters you have throughout the West who can point with pride to Fancher Creek Nursery grown trees which have created a standard of their own through the exceptional care and thought you have given to the perfecting of all of your stock.

The very fact that I had the right kind of a start and in connection with this, that I gave proper attention to the matter of pruning, cultivating, and fertilizing has in a measure contributed to the very satisfactory results which I have succeeded in obtaining. You have visited my orchard from time to time, but I do not believe you have ever fully realized the success I have met with.

My orchard is now six years old and up to and including 1914, I have delivered from the 900 trees, 400 tons of peaches, and have received for the same the tidy sum of $10.000. If I do say it myself, I think there are very few orchardists who can make a more favorable report than this.

Only recently I measured a few of these trees and I was very much surprised myself to find that they average from two to three feet in circumference a foot above the ground, while neighboring orchards, planted on the same character of soil, ten years of age and older, would not average over one foot in circumference.

I think I have demonstrated very fully that any fruit grower who will secure quality trees to begin with, such as you always furnish, and will put the proper thought into the care of them, will meet with the same result that I have obtained. I want to take this opportunity of thanking you for the advice that you have given me from time to time and I want to say further, that it is this kind of service which does not end after the sale of an article that is appreciated.

Yours truly,
(Signed) C. H. SCHMIDT.

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BOX 18, FRESNO, CAL.

ACREAGE OF CALIFORNIA FRUITS.

The following table tells what kinds of fruits have proved most popular in each county, and the figures for non-bearing acreage tell something of the confidence of fruit growers in the future. We are indebted to State Horticultural Commissioner A. J. Cook and his chief deputy, Geo. P. Weldon, for access to the recent annual reports of county horticultural commissioners from which the figures were taken. Many fruits only locally grown or newly introduced, are not included, and some counties are omitted, because their commissioners did not report in time. Alfalfa is included because the figures were available, and because it is so widely grown.

[Tabulated for PACIFIC RURAL PRESS from Annual Reports of County Horticultural Commissioners.]

County		Alfalfa	Almonds	Apples	Apricots	Cherries	Figs	Lemons	Olives	Oranges	Peaches	Pears	Plums	Prunes	Walnuts
Alameda	B	3076	500	136	5000	2000		22			200	565	75	116	12
	N		400	100				32							
Butte	B	10000	1800	500	[illegible]	75	155		1200	2000	3000	400	100	2000	1500
	N		1000	400	15	40	[illegible]		1100	240	730	350	125	1500	
Colusa	B	10000	300		30		[illegible]			40	303	[illegible]		1000	40
	N		1800					800		200	100		20	1000	.
Contra Costa	B	1100	1737	160	500	200	[illegible]	5		13	600	800	100	1100	20
	N		850	80	220	80	5	1	143	5	250	[illegible]	50	250	[illegible]
El Dorado	B			[illegible]		6			5		300	500	300		
	N			200		10					500	900	500		
Fresno	B	57728			2750		2919	[illegible]	502	1788	43151	[illegible]	343	981	159
	N														
Glenn	B	23000	150	78	200			[illegible]	42	75	[illegible]	17		210	
	N		1665	140	255		350	280	193	2830	2720	420		614	150
Humboldt	B			1100											30
	N														350
Imperial	B	98009			110		52	8	51	73	[illegible]	36	18		
	M				[illegible]		96	13	135	126	125	90	[illegible]		
Inyo	B	70000		1000	25	[illegible]	5				450	250	65	50	20
	N			1100	[illegible]						300	300	[illegible]		
Kern	B	95000		100	[illegible]		14		40	100	600	190	50	200	
	N		90	1857	185				475	1572	450	892	100	342	
Kings	B	50000			1700						7950			560	
	N				260						1040				
Lake	B		53	135	27	[illegible]	15				65	360		347	34
	N		250	[illegible]	9	14	[illegible]				[illegible]	1208		100	142
Los Angeles	B	22500	600	1400	2039		500	5000	2400	25585	1600	350	600	250	10074
	N		100	[illegible]			500	5000	2000	10000	300	200	100	200	2063
Madera	B	19000	40	200	100		100	5	153	10	650	5		60	
	N		35	70	[illegible]		65	1	585	5	1050	5	60	5	5
Mendocino	B	4500	25	948	12	16	5				55	650	10	320	15
	N			160							110	250		75	25
Merced	B	75000	400	60	200	5	400	12	65	40	4000	75	[illegible]	40	30
	N		150	40	125	10	890	[illegible]	50	45	2000	[illegible]	30	75	35
Modoc	B			265											
	N			335											
Monterey	B	15000	20	4500	395						50	[illegible]		20	
	N		10	600	285							45			
Nevada	B	1000	10	1500	15	75	20	2	5	20	350	600	110	110	20
	N			200	[illegible]	10	5				300	1000	200		50
Placer	B	475	250	450	420	350	[illegible]		320	350	7000	1500	5500		
	N					50					750	250	1000		
Riverside	B	25000	818	498	1995	25	27	2478	1203	17492	987	235	6	318	349
	N		1328	2419	2577	230	42	1965	572	2810	6127	470	26	210	870
Sacramento	B	40000	921	344	470	330	100	15	600	875	1650	2900	1250	650	150
	N		700	200	100	200		20	560	825	1000	2000	600	500	50
San Benito	B	3750	125	325	1500	70					525	250		2400	25
	N		50	150	1000	51					225	175		650	50
San Bernardino	B	10001		1024	1618	41		2309	566	32888	5666	36	8	54	470
	N			10131	[illegible]	25		2152	764	7574	1847	498	12	72	324
San Diego	B		45	1110	113	18	10	3016	829	1262	621		17	48	106
	N			271	23			784	50	67	250			44	166
San Joaquin	B	5500	1500		1000	1500	67		600	15	4000	700	300	500	200
	N		500		50	500	22	17	150	20	4000	1000	[illegible]	1000	1800
Santa Barbara	B	1000		400	110	110		[illegible]	440	5	75	20			4800
	N			150	220	150		400	150	2	709	2		.	800
Santa Clara	B	2050	321	430	5701	2457	72	25	181	21	6120	1321	2750	52950	447
	N		96	624	255	3143	33	15	[illegible]	13	425	163	187	4113	151
Santa Cruz	B	300		15000	1200	100		3			50			300	
	N			1500	800	200		50			100				
Shasta	B	3000	50	300	6.5	[illegible]	16		200	7	300	110	20	750	33
	N			140	4.5	7	5		236	3	175	10	15	100	7
Siskiyou	B	80000		800	45	40					950		36		[illegible]
	N			1250	38	60					11		530		45
Solano	B	12000	1000		1300	700			20	10	4200	1000	2521	4345	
	N		415		150	300		20		20	600	230	1520	1800	
Sonoma	B		152	6968.8	408	935	170	13	1007	151	803	1077	99	7629	288
	N		242	5167.2	25	679		1	2	7	421	501	118	2503	297
Stanislaus	B	85000	625	113	525	25	200	15	150	225	2520	233	210	45	50
	N		400	20	50		20	5	20	20	650	40	30	25	70
Sutter	B	3386	1200	200	100	150	300		35		3100	250	250	500	
	N		500	50	50	.7	150		50		1700	50	125	350	50
Tehama	B	12000	350	500	600		50	25	1000	225	3877	350	100	1300	
	N		500						300		700	350		300	
Ventura	B	3000	200		2830			2390		2131					7785
	N				2377			3000		924				.	2623
Yolo	B	19000	2250	25	1850		250		320	50	1900	975	600	1350	30
	N		2750		75		25		90	30	150	50	70	175	15
Yuba	B	3145	135	430	80	25	120	25	330	300	765	495	260	280	
	N		25	75	25	[illegible]	200		200	25	235	100	100	75	

GROUPING VARIETY EXHIBITS.

[Written for PACIFIC RURAL PRESS.]

A man up a stump at a fair is a mixed metaphor. But to such a man interested in what grows on horticultural stumps is seems like it would be better for the visitors and better for the exhibitors to have horticultural products displayed by varieties rather than by counties.

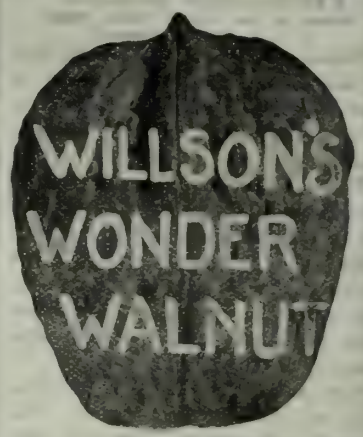
I am more interested in learning what variety to grow than in where it grows—that comes second. When I see a solid display of one variety, I can compare the different specimens with each other, being assured that each represents the best produced in a given community. Without running across the hall to find a comparative exhibit and forgetting details of the first, I can decide quite readily which are the best and the entry cards will tell me where those are grown.

Nursery displays of trees of that variety near the plate displays would be good growing on the different roots in tubs of the kinds of soil suitable for those roots, with cards indicating their possibilities under various moisture, and alkali conditions, and the tolerance of the tops for different climates.

Such a chance to study varieties would be of special interest to intending planters. That is the kind a nurseryman displays for, so it would benefit the exhibitor too.

County exhibitors do not need to lose their identity, for they may still have their booths with sample displays of their products and cards showing the relative importance of such varieties in their county, with characteristic pictures to illustrate.

Their real displays being scattered over the whole horticultural exhibit gives multiplied opportunity to advertise the county on every hand in the exhibit of every variety.



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The standard fall spray for the control of Anthracnose on apple trees, grape vines, blackberries and raspberries, and for the control of Peach Blight (Shot-hole Fungus) on peach trees and other stone fruits.

"Orchard Brand"

Bordeaux Mixture Paste is made from the highest grade of materials, combined by chemical processes and put in paste form. The paste as sold is ready for use and dilutes readily in water, thus overcoming the necessity of dissolving bluestone, slacking lime, diluting the two separately, and mixing together after dilution. It is uniform in composition and when applied thoroughly, it is an effective treatment against the troubles mentioned above.

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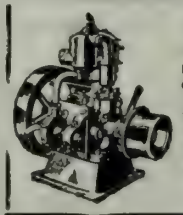
S. W. FOSTER, Entomologist. SAN FRANCISCO, California.



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PHILLIPS! We cut our buds from a block of trees that have proven an exceptionally good strain of this variety. Peach trees are always a safe investment—the demand is large, the price firm, and the profit good. What more can you ask?

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TREES TRUE TO NAME. THE SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES.

Deciduous Root Stock.

[Adapted from CALIFORNIA FRUITS and from experiences of our readers.]

Apple.—Northern Spy is practically the only root resistant to the universal and almost unmanageable pest, the wooly aphis. Resistant roots cannot be obtained from Northern Spy seeds; they must be taken from Northern Spy trees or cuttings. Pear roots are usually no good for the apple, though C. P. Huestis of Placer county got two boxes of Gravensteins from one tree the second year after grafting on a pear.

Apricot.—Peach root for light, warm, well-drained soils gives quick growth, early fruiting, and practical immunity from gophers below ground. Salway or other peaches with long growing season for fruit are considered most thrifty. Apricot roots for deep, rich, well-drained, loamy soils not subject to much drying, make great growth and superior productivity. Almond roots give a poor union which may allow thrifty growth a year or two but may break off in a hard wind. Some growers have secured good unions by side root grafting. Almond root is all right for well-drained soils if peach or plum are first worked on it and then the apricot. J. C. Shinn of Alameda county recommends myrobalan root for apricots on heavy soils.

Cherry.—In California, most cherry trees are on wild cherry stock. Most of these are on Mazzard seedlings which produce better growing trees where moisture is neither excessive nor lacking. It has a slight dwarfing influence. Mahaleb stock ripens its wood earlier and so is hardier against cold winter temperatures. It also stands more wetness and drouth. The Morello stock shows good affinity for Black Tartarian, upon which the other varieties as the Guigne and Royal Anne may be worked. It is used some in the deep sediment under the Sacramento river levees.

Peach.—Peach roots for well-drained soils, from Salway or other late varieties, especially strong growing yellow peaches. Hard shell sweet almond is a popular root, hardy and thrifty, especially for dry soils. Plums, as St. Julian or Myrobalan for wet soils are losing the popularity they once had for peach stocks. The peach-almond hybrid has been but little used.

Pear.—Mostly grafted on French pear seedlings. Japanese pear stock is coming to be used extensively. Quince stock dwarfs the trees and used to be popular, but few orchards are now on this root. Angiers quince root is said to resist the blight. We would be glad to hear of our readers who have found it so or not so. The Oregon Agricultural College is making extensive experiments to find blight resistant varieties.

Plums and Prunes.—Mostly on myrobalan seedlings, which have roots suitable for all kinds of soils, especially wet ones, and do not sucker as the other wild plums do. Peach roots make poor unions with many varieties as the Robe de Sargent, Columbia, Yellow Egg, Washington and Sugar. But C. V. Freed of Placer county has found that the Clyman "falls in love" with the peach and other varieties graft well into Clyman. Practically all the European plums grafted on peach make a warty growth at the union, consisting of badly cross-grained wood, but make straight-grained union on Clyman. Tragedy budded on peach suckers healed over the stub in five years. H. Reinecke of Silva Bergtholdt Co., successfully works Japanese varieties on peaches.

Peach roots are good for French prunes on well-drained soils where gophers are troublesome; but apricots make a poor union with French prunes in many cases. Apricot makes good unions with Sugar prunes and other soft wooded varieties.

Almond roots make good unions with French and German (Italian or Fellenberg) prunes, etc., via which they may be worked to other plums. Mr. Reinecke has Wickson plums worked on almond.

Germain Established 1871 SEED & PLANT CO. 326-328-330 SO. MAIN ST. LOS ANGELES, CALIFORNIA

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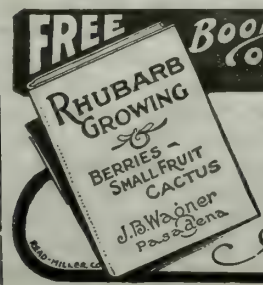

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Tree Fruits for Shipment.

[Written for PACIFIC RURAL PRESS.]

There are two sections of the State where tree fruits are grown almost exclusively for shipment, and several which ship fresh, as well as dry or can their crops. The unirrigated Vacaville district, protected by the mountain ranges on the west side of the Sacramento valley, has the advantage, with most fruits, of earliness over the rest of the State. The Placer county district, in the foothills, though a little later in the season, partly due to the general practice of irrigation, has the advantage of starting a car of fruit the evening after it is loaded, hauling it with ventilators open, to continually cooler altitudes as far as Truckee, where it is iced and on its way a day ahead of any picked from the trees at the same time in other parts of the State. The condition of the fruit en route is more or less better, too, because it didn't have to roll eight to twenty-four hours through the hot valleys before passing through Placer county east. Eldorado and Nevada counties have nearly the same advantages as Placer except for transportation.

Fruits that grow well in Imperial valley are earlier there than anywhere else. Peaches and grapes grown in the San Joaquin valley yield best; but the former do not carry as well and are, therefore, mainly raised for drying and canning. Shipping plums and peaches were formerly extensively grown in the Santa Clara valley, but the latter carried so wretchedly that practically none are shipped out today. Cherries and late pears are their principal shipping fruits—others are dried or canned. The Sacramento river district has sometimes beaten Vacaville on cherries, by the hook or crook which usually determines which section ships the first out. On Bartlett pears the Sacramento river section beats all others in yield.

Early Varieties Without Irrigation.—"In any unirrigated reasonably frost-free fruit section, it is best to plant early ripening vegetables so they can mature while the required moisture is most plentiful," says F. B. McKevitt, who has long been a large grower and fruit shipper from Vacaville.

The warm exposure of Vaca valley and its neighboring hills, and the protection afforded by the higher ranges, reduce frost hazard to a minimum, so that region is peculiarly adapted to the growth of early fruits; and even lemons do well, though not grown commercially. So, if you climb one of the nearby peaks, you see the great carpet of solid orchards on the level floor of the valley rise gently undulating over the surrounding foothills, to the uneven edge which marks the outline of conditions so far found profitable.

Apricots.—Many of these orchards are early apricots—the Royal—which, according to J. L. Nagle, manager of the California Fruit Exchange, is practically the only apricot that can be depended upon to reach the Eastern markets in good condition. Solid carloads of apricots are sent from Vacaville during the shipping season, while earlier, when carload lots have not ripened, as well as later in the season, part-cars are sent to Placer county to be finished as assorted cars of apricots, plums, peaches, pears, etc. Apricot-growing in Placer county is almost unknown, due to a little later frosts and also to the shot-hole fungus, which spoils that fruit for market.

But the Eastern market for fresh apricots is limited, anyway, under our present marketing transportation facilities. C. E. Virden, manager of the California Fruit Distributors, says less than 300 cars are shipped from the State annually. This year was the heaviest ever known, 382 cars, and that was too many. The previous record was 279 cars. "If you move over a certain quantity it's 'Good night apricots!'" Thus he advises the planting of apricots for other purposes, or not at all. This is what they are doing to a certain extent in the Winters section, where their plan of marketing dried fruits is proving very successful, and will be described in a later issue.

In the Vacaville district the age of the apricot trees is largely blamed by Mr. McKevitt for the short crops. He suggests that this is also due to the greater but unavailable amount of moisture required per tree. Irrigation, if that were feasible, would increase the certainty of large crops; but would at the same time perhaps somewhat delay the ripening of early varieties and tend to nullify Vacaville's advantage in this respect. But with irrigation, one could raise late varieties for canning and drying. M. S. Sharpe says Vaca valley is going out of apricots because they all ripen at once, and labor is unavailable to pick and pack them.

Cherries and Grapes.—"In the Vacaville district early cherries are profitable; but I could scarcely recommend large planting of cherries there," says the same authority, "because they do better in Alameda and Santa Clara counties. Early grapes, such as Sweet Water and Fontainbleau, used to make money for the Vacaville district; but now Imperial valley comes into the market ahead with early Thompson Seedless and Malagas, and after them the same varieties from Fresno take much of our old-time trade. With later varieties, the flood of Tokays of San Joaquin and Sacramento counties take the market from those of the earlier section."

Peaches. — Peaches for shipping are declared by most shipping authorities to be overdone. For drying, a later peach makes more weight than the early ones. For canning, the San Joaquin valley, with its irrigation, far outyields the dry districts. But Placer county claims considerably the best quality, though lower yield of cannery peaches grown under irrigation in the foothills.

Plums.—Earliness of the various plums gives Vacaville her strongest hold on the fruit shipping industry. Among those mentioned by Mr. McKevitt as worthy of note are the Clyman, Climax, Burbank, Santa Rosa, Wickson, Gaviota, Formosa, and Beauty. The three last named are rather recent introductions; but the latest, the Beauty, has inspired Mr. McKevitt to graft 300 of his trees in-

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to them two years ago. Tragedies do not bear well here nor in Placer county, but on the ranch in Tulare county he has had 21 crops in the past 21 years from a block of this variety; while the Wickson, which is generally a shy bearer in Placer county, has generally good crops about Vacaville. The Clyman is largely topworked to other varieties in Placer county. The Burbank, of which the last named county has more bearing trees than any other, is not much planted any more because its color does not tempt Eastern appetites, though they were found by the writer last summer in the East to excel others for eatableness. The later plums do well in all the foothills and seem to sustain a heavy demand all through their season, but Vaca valley can make more from early varieties. Among the European varieties now most popular in the East are the Tragedy, Grand Duke, Giant, Diamond, and Hungarian. The Hungarian in Placer has been largely topworked to other varities, owing to its irregular bearing in that section.

Time was when yellow, green or red plums sold readily in the East; but the demand has settled for the near future on blue, purple or black varieties. Mr. Nagle remarks that fruit planting for fresh shipment is a speculation anyway—there is no telling what the demand may be when a variety now planted comes into bearing. But it is certain that the demand will be greatest for that variety with the most desirable flavor when it reaches the East, if it arrives there in condition to be handled a few days before consumption. Carrying qualities at proper maturity when picked, plus desirable flavor, will determine the demand.

The large Imperial prune bears well in Vaca valley, and is profitable for shipment fresh three years out of four, besides being available as a high-priced dried product if not shipped fresh. Enos Gopfert of that section contracted his Imperial prunes last May at 12½ cents straight, while French were selling 6½ cents basis.

The most promising shipping fruit for those who are ever alert is the pear. In Placer this fruit and the quince, for which there is little demand, are grown in all the wet draws where peaches and plums would get cold feet. In Vaca valley, according to Mr. McKevitt, the development of Bartletts seems to stand still for a part of the hot season and the pears ripen after those of the Sacramento River sections are gone. This is true only in hot, dry seasons, and would probably not work if Vaca valley were irrigated. This presumption is based on the steady growth of the pears in other sections which are as hot as Vaca valley, but are irrigated.

FARMERS TO ESTABLISH SELLING AGENCY.

At their convention held in San Jose last week, members of the Farmers' Educational and Co-operative Union of America passed a resolution favoring the establishing of a commission house and selling agency in San Francisco, similar to the one recently established in Los Angeles. The executive committee was empowered to make all of the necessary arrangements and to carry them out.

SHALL CALIFORNIA GROW MORE FRUIT?

(Continued from page 491.)

route which connects this state with the Atlantic seaboard. We have also done something in crossing from Portland and Puget Sound. We note this fact that in all these journeys we have in every case seen more fruit trees and vines between San Francisco and the California state line than we saw on any of the lines in its long course of three or four thousand miles across the continent, whether we went through Canada or along the Gulf of Mexicc or any of the lines between these two extremes. The fact is that the consuming ability of North America is not yet much more than entered upon by the production of fruits.

Of course we saw the same things in Europe, for the commercial fruit acreage of that continent was simply pitiful when judged by the California conception and practice in the relation of fruits and fruit products to the food supplies of mankind. And what we saw there last year will be but a fraction of what one can find next year, if this war goes on. We are joyfully glad that the fruit industries of England, the south of France, Spain and Italy have so far escaped ravages and hope they will come through without devastation. But northern and eastern France and the whole of Belgium have been laid waste already: the orchards of the Balkan states and of Hungary are immediately menaced, and it may be that the Russians will destroy the fruit industries of Germany in the terrible struggle which is now in progress. The demand for American surplus fruits which will arise, after pacification and the rebuilding of industries begins, can be measured by no shipments which have been made from this continent hitherto. To California, with her already developed shipping and preserving industries, and with her greatest of all American supplies to be handled by them, will be ready to meet the bulk of this new demand and meet it quickly and cheaply via Panama, and it will take every good piece of fruit that we can grow and handle skillfully to do it.

To meet the coming demand California must, first of all, plant more fruit of kinds which experience has shown to be desirable and commercially serviceable. Second, California growers must strengthen all fruit organizations which are now doing good work and multiply local auxiliaries thereof. Probably new organizations of parallel aims will need to be undertaken. Organization, for handling, for transportation improvements, for financing all progressive undertakings at reasonable terms and rates, alone can enable California to grasp her opportunity. Therefore Californians must plant more fruit and get together for the world-marketing of it.

Royal apricots are pretty near the whole works for shipping, but must be picked too green to make real good eating.

The Panama Canal and The California Fruit Grower.

P-A-N-A-M-A C-A-N-A-L spells, to most people, merely Panama Canal, but to the California Fruit Grower it spells OPPORTUNITY, for fruit can now be shipped, via the Canal, to the Atlantic Seaboard, at

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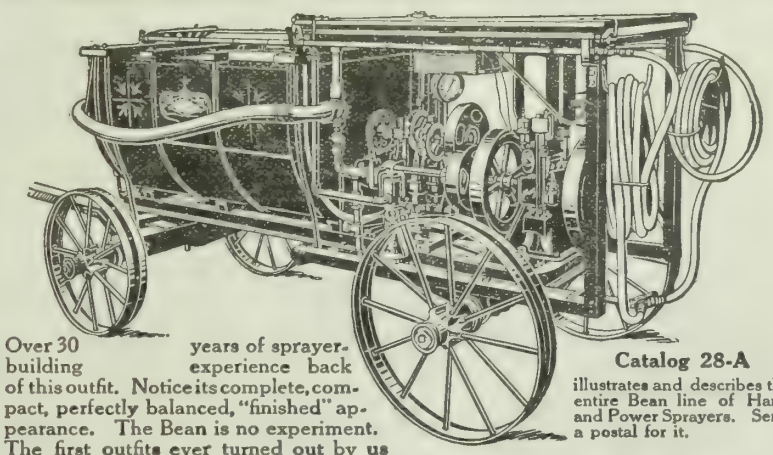

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CALIFORNIA WILD FLOWER SPECIALIST.

845 S. MAIN ST. LOS ANGELES, CAL.

PLANTING ORCHARD TREES.

[Written for PACIFIC RURAL PRESS.]

Having prepared the orchard site as recommended in another article, lay it off and set a stake where each tree is to go. Various systems of doing this will be described later. Extra dollars spent preparing the ground and planting the trees will return an hundred fold in thrifty growth.

Dig the holes bigger and deeper than they should be. In order to set the tree where the stake was, so it will be in line with all other trees in the orchard, carry a 1x2 inch piece 4½ feet long with a small notch half way between the ends. Lay the notch against the stake and set a new stake solidly at each end of your 1x2. Dig the hole without disturbing the two end stakes, lay the 1x2 between them, and set the tree perpendicularly in the notch, or leaning a bit to the wind. Have one man digging while the others are planting as described, the planters using their own stick which is a duplicate of the one used by the digger.

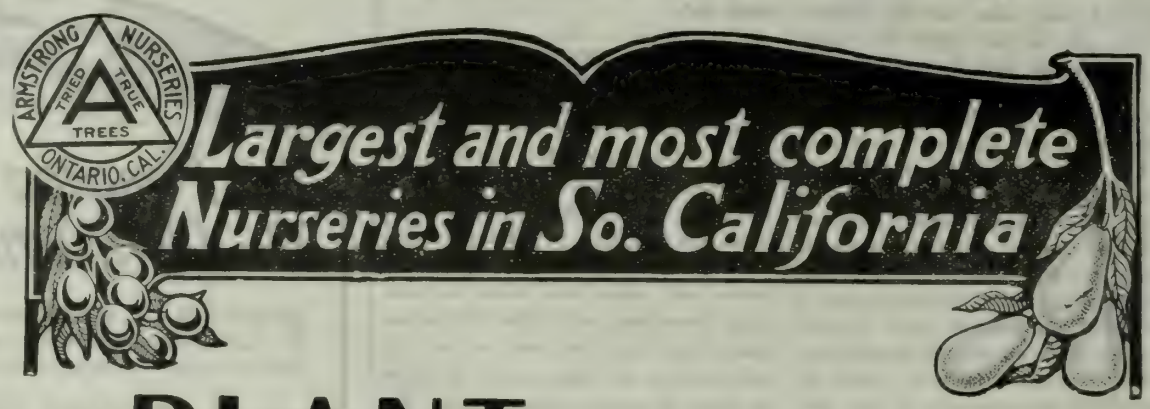
The trees have been heeled in as they came from the nursery, in small lots near their future growing place. Their roots have never been allowed to dry; the dirt used in heeling them in is moist and innocent of clods and well worked through the roots without bruising them.

The planters pull one bundle at a time, wrap the roots in wet burlap, and uncover them only long enough to take out each tree when everything is ready for it to be planted in the moist, fresh earth.

Prune off the long and broken and bruised roots with tight-fitting pruning shears or sharp knife without bruising the cut ends. A 3 to 4 foot tree need not have roots over a foot long. Fill the hole with dirt till the tree as it rests on bottom projects above the surface a little more than it did in the nursery. Sift fine fresh dirt among the roots and pack it with the fingers, not with the feet, until all are covered and the dirt heaped up around the trunk. Then stand with feet on both sides of it and tamp the dirt solidly with feet. You want the tree to project from the ground after the dirt finally settles, as it did in nursery. If part of the previously exposed bark is covered tight, the sap circulation under it will be impeded and perhaps stopped, for that section will likely become unhealthy except in very light soils.

If you must allow the soil to dry before planting fill the hole nearly full of loose earth and then run it full of irrigation water. When that has settled a man should at once fill the hole with loose dry earth.

If the young trees are whips, they should be cut off not over 18 inches above the ground with practically all deciduous tree fruits. This is because practically all the root hairs, which feed the tree, are killed in the transplanting, and material must be taken from the tree itself to grow new root hairs before the tree can begin to really grow. The tree, however, will put out leaves also with its own reserve material, before the new roots are established, and these leaves will so impoverish the tree, both by their making and the evaporation from them, that root growth



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OTHER FRUIT TREES

Write for FREE copy of our combined Catalog, Planter's Guide and Price List. Everything to plant.

Citrus, Deciduous and Sub-Tropical.
Everything for the
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ORANGE APPLE
LEMON PEACH
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---All Varieties "TRUE TO NAME"

Write for our FREE Catalog and Price List of Shade and Ornamental Trees, Roses and Flowering Plants.

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ARMSTRONG NURSERIES

John S. Armstrong, Prop.

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Olive Trees

Olives worked on Picholine Root have stronger growing and deeper feeding root systems than those grown from cuttings.

Our Olives are worked on Picholine Seedlings, the wood being cut from trees having a record for productiveness and size of fruit.

They are prize winners—the kind you want. Write *Us* FIRST.

The Silvia-Bergtholdt Co.
"Fruit Tree Specialists"
P. O. Box 8 Newcastle, Calif.

The KROGH Vertical Pumps

New Type Vertical

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts mean less friction and greater efficiency.

Get our Bulletin No. 78 before deciding on a pump.

KROGH MNFG. CO.

SAN FRANCISCO LOS ANGELES

is seriously checked and often entirely prevented when trees with branches and leaves are transplanted unpruned. If the tree has branches, cut them back severely, leaving only those you need for the head. In cutting the tops off, it is well to leave the top bud on the side of the tree away from the prevailing wind as W. I. Newcomb of Sebastopol does with his apples. This is because the top bud grows most nearly straight up—then the others, which project more nearly at right angles to the trunk, are on the windward side and overbalance the tree that way to meet the wind. Anyhow, it is well to lean the tree to the windward in planting it.

With the moist or moistened dirt packed tight around the roots to prevent their drying out prematurely, the next operation is to protect the trunks from sunburn and rabbits, etc. Most any light colored tree protector will do if it leaves two or three inches air space on the southwest side. Many people wrap tree protectors tight, but there is some danger of overheating. Ventilation by small holes in the protector is not objectionable. The protector should reach up from the ground to the lower bud intended for the head. If it covers this, the bud will not grow well. If it doesn't the bud will soon put forth leaves to protect itself from sunburn. Whitewash mixed with animal repellants is often used as noted in our issue of Feb. 28, page 263.

Then keep the tree growing from the start by proper pruning, irrigation, and cultivation.

A Tip on Almonds

On this continent Almonds are grown only in California. The American market alone demands *four times* the present supply.

With practically an unlimited home market and a monopoly of the product

Plant Almond Trees if you are seeking a real money-making investment. We have an extra fine lot of trees growing on Bitter Almonds, Peach, and Myrobolan Root, but as there is usually a shortage of trees on Bitter Almond, place your contract immediately—don't delay.

Write Us First

The Silva-Bergtholdt Co.
P. O. Box B Newcastle, Cal.

Fruit Trees

ELMER BROS. NURSERY

AT SAN JOSE, CALIF.

The nursery that helped to make Santa Clara Valley famous.

QUALITY IS OUR MOTTO

We propagate all kinds of fruit trees; also grow the best strain of the Franquette Walnut. We make the prices right. Send for our advance price list.

LIME FOR LAND

HYDRATED LIME AND GROUND CARBONATE (LIMESTONE)

See University of California Circular No. 111—One Ton Hydrate equals 2 Tons Carbonate

PACIFIC LIME AND PLASTER CO.,

807 MONADNOCK BLDG. SAN FRANCISCO, CAL.

WHAT AND WHEN TO PLANT

We desire to apprise all garden lovers on the Pacific Coast that we the sending out a monthly bulletin of "WHAT AND WHEN TO PLANT." Our initial issue was the September number. The surprising volume of congratulatory and appreciative messages which were received is assuring evidence that it struck the "responsive chord."

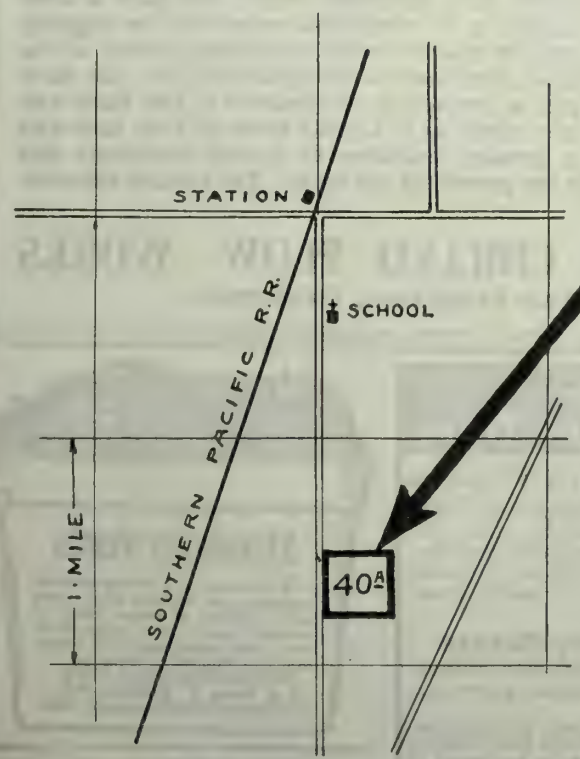
Its paramount motives are to engender united interest in the work of beautifying California and to foster it; to aid and guide all who may be in need of timely suggestions; to give intelligent information; to provide the source of supply and create the demand for seasonable and attractive flowers and decorative plants and trees; and to make it the authoritative exponent of ornamental garden culture in this region.

With one of the largest plants in the entire West to draw from, and the experience of nearly twenty-five years in the various phases of ornamental horticulture, we are able to incorporate in our monthly bulletin a series of practical suggestions not otherwise easily obtained. This bulletin is devoted exclusively to ornamental horticulture. The November issue of eight pages, just from the press, contains a series of cultural notes on bulbous plants, with a full list of the best varieties for planting now. This bulletin is free. If you have a garden you cannot afford to be without a copy. Write now.

HOWARD & SMITH

OLIVE AND NINTH STREETS LOS ANGELES, CALIFORNIA

40 Acre Special



We will start every man RIGHT on a

40-ACRE FARM

This 40 Acres:-

1½ miles from station on S. P.; clean, level, good land, San Joaquin loam; is adapted for growing alfalfa, beans, corn, almonds, peaches, figs, olives. It is located in the Sacramento Valley near eastern foothills. It is now without improvements, but ready for early planting.

THE PRICE IS

$150 Per Acre

One-fourth cash, balance to be arranged.

THIS PRICE INCLUDES

A Modern Pumping Plant

completely equipped and installed.
A Selection of TREES and SEED best suited to the land.
Necessary FARM IMPLEMENTS for immediate work.

This Completely Equipped Farm is ready for immediate occupancy and early crops.

NOVEMBER AND DECEMBER ARE THE MONTHS TO PREPARE LAND FOR SPRING PLANTING.

REMEMBER—that we will send a three months' subscription to the Pacific Rural Press to anyone in the East who is interested in owning a farm in California. Write for further particulars or call upon

DUDLEY MOULTON

Formerly Deputy Commissioner of Horticulture of California, Expert, United States Department of Agriculture.

1202-1204 FIRST NATIONAL BANK BUILDING SAN FRANCISCO.

Fruit Growers' Convention.

[Written for PACIFIC RURAL PRESS.]

As usual, the State Fruit Growers' Convention, which held sessions all last week in Los Angeles, was the means of bringing to wide publicity the experience of leaders who are doing the big things in California horticulture and solving its problems.

Horticultural Commissioners. — The county horticultural commissioners, who are in most intimate contact with the actual producers, met Monday and Tuesday preceding the convention proper. Among the points made by speakers and endorsed by the body were the following: The horticultural commissioners are, among other capacities, police officers to enforce definite provisions of the law regarding inspection and disposal of infected nursery stock. They should be careful not to overreach their authority. But the law does not yet adequately cover all conditions met in the field. Their work cannot now be done most economically or with least inconvenience to fruit growers. A resolution was adopted which favors giving the State Commission of Horticulture full power and responsibility for interdistrict quarantines without regard to county lines, and separate quarantines for different pests. In the later sessions of the convention interstate agreements on the Pacific coast were advocated to secure uniform horticultural quarantine laws.

The commissioners unanimously voted to co-operate with the University Insecticide Laboratory to compile data as to the amounts of insecticides used in the State.

Breeding against Disease. — Breeding and selection of disease resistant root stocks and varieties were pronounced very desirable, especially with diseases such as crown gall, citrus gummosis, pear blight, and walnut blight, for which only expensive tree surgery is effective. Experiments on this line have brought encouraging but not absolutely conclusive results. Sour orange stock has shown much more resistance to brown rot gummosis than sweet stock. Contract or county spraying and fumigation work in disease control, except as a last resort, were rather discountenanced in favor of private or community measures.

E. H. Grubb, of the U. S. D. A., was unexpectedly present, having just returned from a study of European potato troubles. Great Britain potato growers sprout seed potatoes before planting and reduce their time in the ground to about 90 days, or more than 30 days less than in California. They plant whole potatoes and cultivate deep, but more than this, they alternate grass or forage crops with potatoes to get rid of insects and diseases. He says this would increase our crops by reducing the diseases.

Women's Work.—A special feature of the convention was the attention paid to women's work on the farms. The thinking stimulated among the farm women by the agricultural clubs, has brought out many new projects and ideas for more livable and profitable conditions. Fruit canning and jelly making, preparation and selling methods for various by-products, have a large place in the profitableness of ranch operation. Among "opportunities for women in horticulture" were named flower growing, landscape gardening, raising small fruits, etc. We thought of the lady who recently visited our office suggesting that we do not publish enough about what women are doing in tree-fruit growing.

Citrus.—The reduced tariff was proclaimed as the forerunner of ruin to the citrus industry and of decreased wages to those working in it, but certain hopeful points were brought out which seem to indicate that the situation is safe after all. It was admitted that the quality of our output can be improved, the losses by disease and frost decreased, and the demand for citrus fruits increased by the advertising and other methods of the co-operative California Fruit Growers' Exchange. Transportation via Panama and development of European markets would help along. It was shown that budding non-producing trees to productive types, proper fertilization and pruning, careful handling, etc., could double the present average production of 200 boxes of lemons per acre with small increase in cost per box so that it will likely be possible to drive Sicilian lemons from the market by business competition. Reduction of loss by frost is promised by use of a central tank feeding oil to the fire pots through burners to secure more perfect combustion and better control. An eastern horticulturist who predicted in 1890 that citrus shipments would reach 10,000 cars by 1900 and saw double that number shipped that year, now predicts 100,000 cars within the next 10 years if the scientific cultural methods of the growers and the "highly efficient marketing agency" should be improved as conditions change.

The same authority thanks California fruit growers in behalf of those in the east for the cultural, packing, and marketing methods that are enabling the east to almost beat us at our own game on a certain few fruits. Early peaches were first grown commercially in the east after California had developed an eastern market for them.

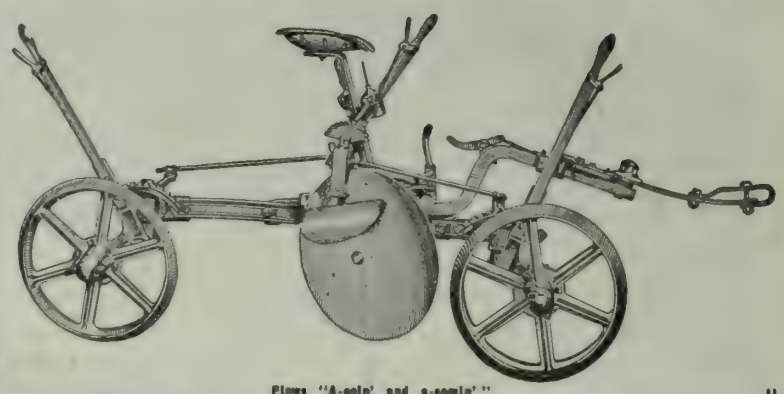
Standardization of fruits shipped east was advocated and the proposed State law creating a commission to enforce such standardization was presented. Reduction of varieties to a few of the best grown for shipment was advocated.

Tropical and semitropical fruits had a large place on the program, being discussed by a number of people who are making them a specialty in Southern California.

An address on farm credits announced the work of a committee which is formulating a plan by which rural districts can bond themselves to secure money at low rates on long time to move the crops. Government aid by long-time loans to purchasers of land is another phase of the plan.

A committee was appointed to present a system for a State organization of fruit growers at the next convention.

Benicia Reversible Disc Plows



Plows "A-goin' and a-comin'."

Principle Right Construction Right Results Right Prices Right

The Benicia Reversible Disc Plow

WITH NEW PATENT ADJUSTABLE TONGUE is the most successful Reversible Disc Plow built. It is simple in design, FEW IN PARTS, and perfect in construction, and its durability is beyond question. It is easily operated on hillside or level land.

On Steep Hillside, where a team can walk and draw a plow, it works perfectly.

WE GUARANTEE OUR REVERSIBLE DISC PLOW TO DO GOOD WORK, not only in dry, hard and sticky ground, but to do good work in any fallow ground either clean or trashy, on hillside or level; in short, to do good work anywhere, except in sod land, at any time when plowing can be done. This is making a large claim for this plow but by actual use and tests it has proved to be the ideal plow to meet these conditions.

AS A DEEP TILLER it is an unqualified success. Bear in mind, this Plow is not necessarily for use on hillsides only; it is the best Single Sulky Plow for general use made today.

Baker & Hamilton

San Francisco Los Angeles

Attention Orchardists

We desire to state that the OLIVER CHILLED PLOW WORKS produces a special deep tillage sulky plow that will plow a clean furrow 14 to 18 inches deep. This plow is used for tree planting and is an economical substitute for digging holes, as it loosens the soil for better and freer growth of the roots. This special plow has the strength to rip up the hard soils and plow pan so frequently encountered in this State and its use in extensive planting is a great saver of both time and money, creating greater resistance to drouth conditions and better results in the growth of the trees. For further information, address

OLIVER CHILLED PLOW WORKS

San Francisco, California

If in Doubt— Plant Prune Trees

The demand for Prunes is constantly increasing and California must supply this demand. With a cheap water rate thru to the Eastern states, giving California growers control of this market, prune trees become

Staple Money-Makers

In the export market they compete successfully with European grown varieties.

Our parent trees of French, Imperial, Sugar and Robe de Sargent have been carefully selected from trees having the best record of QUALITY, PRODUCTIVENESS AND SIZE OF FRUIT.

WRITE US FIRST

The Silva-Bergtholdt Co.
P. O. Box B Newcastle, Cal.

"California Vegetables," by E. J. Wickson. $2 postpaid. Pacific Rural Press, San Francisco.

Classified Advertisements

Rates 3c per word. No order for less than 25c per week. If you have anything to sell, or want anything, use these columns.

LAND FOR SALE.

VICTORIA, AUSTRALIA, WANTS SETTLERS. Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion being arranged. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg., San Francisco.

FOR RENT—300 acres of alfalfa land on Dixon Ridge. Abundance of water for irrigation. Apply, J. H. Glide, Dixon, Cal.

TREES AND NURSERY STOCK.

IT WILL PAY you to let me figure with you on large or small plantings of Apples, Pears, Apricots, Prunes, Peaches, Strawberries, Logans, Blacks, Currants Gooseberries, etc. Send list of requirements. To secure mailing lists, 12 deciduous fruit trees for $2.50 —your selection. 100 Strawberries for $1.00. All prepaid. H. A. Hyde, Nurseryman, Watsonville, Cal.

MISSION OLIVE TREES—Will be two years old next March. To be absolutely sure of getting Missions, I only propagate from my own tres, raised thirty years ago. Also cuttings from same trees for sale. W. A. Hayne, Box 461, Marysville.

OLIVES OUR SPECIALTY. Find out where the "dead ones" came from. Then try ours; they grow. Northern trees are best for northern planting. Fine thrifty trees at growers' prices. Exeter Nurseries, Exeter, Calif.

WALNUT TREES — Late blight-resisting varieties, grafted and budded on California black and hybrid roots. Eureka, Franquette, Mayette, Neffs Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks Building, Stockton, Cal

PLANT Hemet grown trees. None better. Large, healthy Royal and Tilton Apricots, Phillips and Tuscan Cling Peaches. 5 to 8 feet, $20 per 100; $180 per 1000. K. B. Utigaard, Hemet, Cal.

BRANDYWINE STRAWBERRY PLANTS for sale. All large, well rooted plants packed to ship anywhere. J. H. Shirk, Tulare, Cal.

MUIR AND ELBERTA PEACH trees. $5 per hundred. N. M. Cunningham, Red Bluff, Cal.

BERRY PLANTS, Rhubarb, Cacti.—Send today for price list. Louis F. Scribner, R 2, Pasadena, Cal.

QUALITY TREES—Burbank Cactus Cash Nurseries, Sebastopol, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

MISCELLANEOUS.

CATTLE RANCH FOR SALE—Known as the Robla Lomas Cattle Ranch in Tulare County. Well watered, oak covered hills, 5 miles from railway. Some alfalfa and some farming land, fenced and cross-fenced. 10,129 acres. Price, $10. 10% down and balance on long term at 6%. No exchange. Principals only address D. B. Harris, Minturn, Cal.

REBUILT GAS ENGINES sold for 50 per cent of their new value; cylinders rebored, new pistons and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

AUTOMOBILE OPPORTUNITY—Can save you several hundred dollars on brand new cars of one of the best and most popular makes on the market. If you intend to buy a car, write box 84, Pacific Rural Press.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS. 366-8 Howard St., San Francisco.

"SMITHS' PAY THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITHS' CASH STORE, 106 Clay St., San Francisco.

PRACTICAL HORTICULTURIST wants proposition to take working interest in ranch or development work on large scale; or salary. Extensive experience. Also nursery work. Box 94, this office.

PATENTS—BOOKS, 100 Mechanical Movements and full information free. Expert services. Best terms. Write today. Fred G. Dieterich & Co., Patent Lawyers, 607 Ouray Bldg., Wash., D. C.

BUY YOUR APPLES direct from grower. Bellflowers Newtowns, Langford Seedlings, Missouri Pippins. Prices on request. Edward A. Hall, Watsonville, Cal.

EXPERIENCED Swiss dairyman with family wishes to take a small dairy on shares. V. Capaul, Colfax, Cal.

ALFALFA SEED—Buy direct from grower. B. F. Howser, Corcoran, Kings county.

WANTED.

FIREMEN, BRAKEMEN, railroads near your home. $100-$120. Experience unnecessary. Send age, postage. Railway Association, Dept. P-2, Brooklyn, N. Y.

WANTED—Dried fruits, nuts, honey, beeswax, beans etc. J. K. Lawrence, 326 Clay St., San Francisco.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 23, San Francisco.

Arizona is to market 40 cars of oranges this year, according to advices from that State. Before the freeze two years ago there were 100 cars a year shipped from there.

OLIVE NURSERY AT HOME.

[Written for PACIFIC RURAL PRESS.]

To the Editor: How is olive nursery stock started, from seeds or cuttings? When do they start bearing? Are oil or pickled olives most profitable?—F. F. S., Redding.

[Seedlings are claimed to be best because they have a tap root which holds the tree against hard winds. They must be grafted or budded to get the variety desired. Cuttings are very easily grown and are of the same variety as the tree from which they came. This is why most nursery olives are grown from cuttings. Seedlings cannot compete with them in business, and the tap root is not generally of enough advantage to pay for the extra cost. However, F. S. Briggs of Palermo grows seedlings for his own use in sheltered beds. E. Wightman of Chico says that use of seedling stock is increasing, but seeds are mostly hard to germinate—only one in a hundred of the Missions—though picholine germinate pretty well. He says that he has tried many ways to get better germination and has observed that they sprout far better after passing through the digestive organs of hens or turkeys. Others have good success from cracking the pits in an iron vice without injuring the kernel. But Mr. Wightman propagates mostly by cuttings. Soft tips of olive wood four inches long are cut in Oct. and Nov., removing all but two tip leaves and clipping off half of each to reduce evaporation. "Flats" (shallow boxes convenient to handle when full of dirt) are filled with sand or loam on top of fresh horse manure which furnishes bottom heat; and the cuttings are set two inches into the dirt. They are kept slightly moist and protected from weather, but allowed light. In the spring they have rooted nicely and are transplanted to the nursery.

One rancher put 2000 of them in flats last fall and set them out in orchard form last spring expecting them to grow two or three feet this season. Mr. Wightman thinks they ought to be held a year in the nursery. Neither would he plant small cuttings directly in the orchard as 90 per cent die. Many, however, plant "truncheons"—which are mature olive sticks a foot long and split into quarters if as large around as the wrist or larger. There is enough reserve material in such a stick to send out strong roots and shoots. Mr. Wightman probably would not object to planting cuttings of one-half inch diameter in the orchard, where the soil is warm in early spring, leaving only the top bud out of ground.

The olive bears enough to pay current expenses of cultivation at four or five years from the seedling. Variations will be found with different varieties and in different locatons. They bear earlier in the foothills than in rich valleys and in the interior than on the coast.

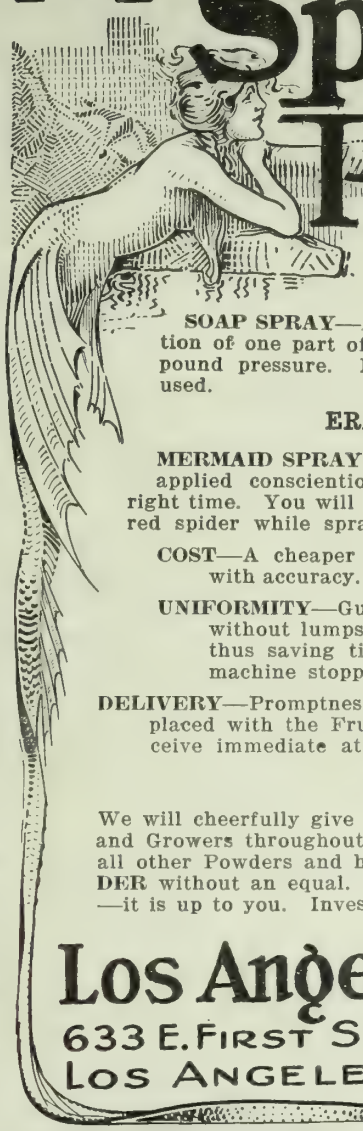
Raise olives for pickling; they are worth three times as much as for oil; use the culls only for the latter purpose.—Editor.]

Black Tartarian cherries lead in out of the state shipments, Royal Annes and Republicans following. Bings have a growing popularity on the market, also Black Oregon. There is no objection growing Centennials.

Mermaid Spray Powder

FOR CITRUS AND DECIDUOUS FRUIT TREES

MADE IN CALIFORNIA



ANALYSIS:—Curd Soap, 50 per ct.; Bicarbonate of Soda, 0.5 per ct; Carbonate Soda, 37.5 per ct. Balance Moisture.

SOAP SPRAY—An effective soap spray used in the proportion of one part of powder to six gallons of water with 200-pound pressure. Not harmful to trees or fruit if properly used.

ERADICATES SCALE.

MERMAID SPRAY POWDER will kill this form of pest when applied conscientiously with the above proportions at the right time. You will also note its effectiveness towards reducing red spider while spraying for scale.

COST—A cheaper and purer soap powder that is prepared with accuracy.

UNIFORMITY—Guaranteed to be at all times uniform and without lumps and to dissolve with absolutely no waste, thus saving time and money by not having your spray machine stopped to clean out impurities.

DELIVERY—Promptness is our watchword. Any order placed with the Fruit Growers Supply Company will receive immediate attention.

WRITE US TODAY

We will cheerfully give reference from Professional Sprayers and Growers throughout Southern California who have tried all other Powders and have found MERMAID SPRAY POWDER without an equal. If California can produce the goods —it is up to you. Investigate.

Los Angeles Soap Co.

633 E. First St. Los Angeles | 250-258 Front St. San Francisco

Citrus Nursery Stock

Citrus Trees grown on famous

FROSTLESS LEMON HEIGHTS

Tustin, California.

All selected buds on sour stock, clean, thrifty, 20,000 Valencias, 20,000 Washington navels, 20,000 Eureka lemons, 2,000 seedless grapefruit. Extra care given to make straight, healthy trees.

Write or telephone for particulars and prices to

Tustin Packing Co.

Tustin, California

CITRUS HEIGHTS NURSERY

SACRAMENTO, CAL.

We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

Succession of Ripening Dates.

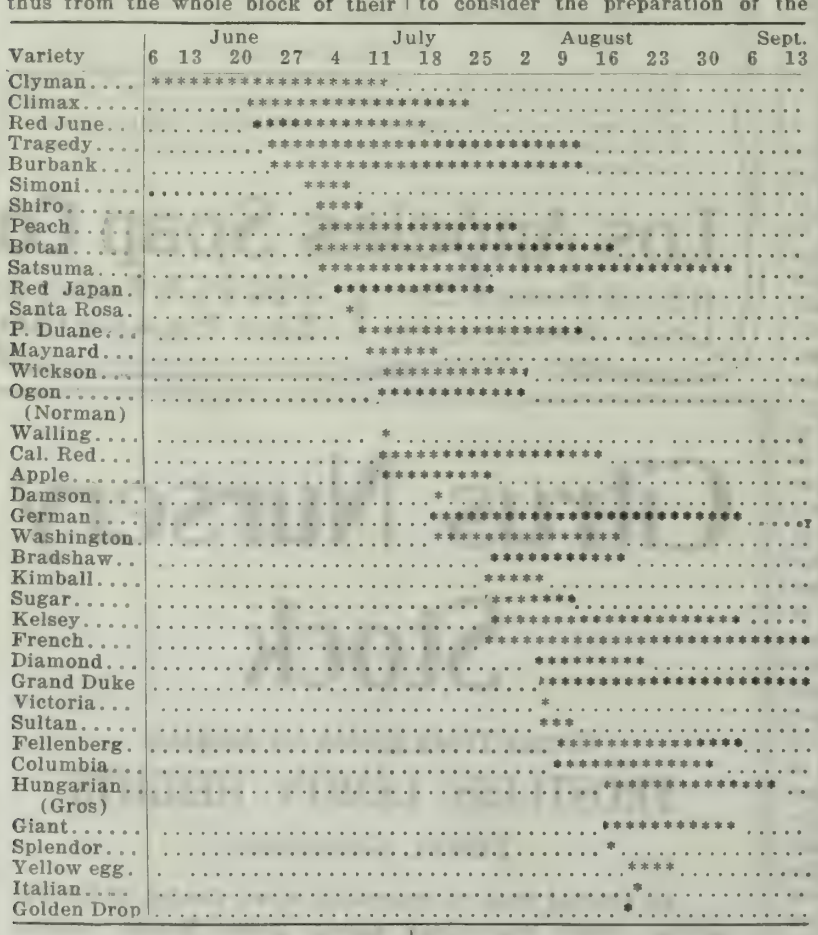
[Written for PACIFIC RURAL PRESS.]

In the economical planting of a fruit ranch such varieties are chosen as will distribute the work evenly throughout the ripening season, providing work for a certain sized crew from the ripening of the first variety till the last variety is harvested.

This applies to all fruits grown for shipping, canning, or drying. No fruit should be lost because too much of it ripens at once—neither should there be a lull between varieties when the crew will have to be discharged or paid for idle time. More efficient, dependable labor can be obtained if you can use the same man through the season and he can afford to work at lower wages. Then you lose no time hunting help when the next variety is ripening, and he loses no time hunting a job. As the season progresses, the team work of your crew eliminates more and more waste motion.

Such economical planting involves not only a study of the ripening periods of the varieties, but also the amount of time required to harvest the crop from individual trees and thus from the whole block of their variety. If all the fruit ripens on a tree at once, less labor is required in the harvesting than if it must be picked over three or four times, or if it may hang on the tree a week or two thereafter it might be picked. But more labor is required at the rush time of ripening, so a smaller proportion of this variety is desirable than of the other kinds.

As an example of a study to determine which varieties follow one another in ripening, we have made the following diagram showing the dates of the first and last shipments of each variety of plums handled by one company at Newcastle, Placer county. The dates would have to be rearranged for other counties, and they do not express the possible limits of ripening in the case of varieties but little grown, and having been handled in one shipment. On the other hand those showing wide limits may represent the fruit from several ranches with differing conditions. It is submitted as a community proposition to show only relative dates of ripening. It does not even indicate the relative quantity of each variety since it shows only the time between the first and last shipments.



PREPARING SOIL FOR TREES.

[Written for PACIFIC RURAL PRESS.]

If your proposed orchard site has the proper air drainage, soil drainage, soil structure, fertility, depth, and subsoil, and proper freedom from frost, wind or sun heat to suit the varieties you wish to plant, and if either rain or irrigation are available to make the trees grow from the start and make strong fruit buds and mature fruit, and if sufficient labor supply is obtainable, and if the site is located conveniently enough to a reasonably certain profitable market, and if you have capital with which to develop it properly, you are ready to consider the preparation of the soil.

"If I ever again plant an orchard, I'll spare no expense to dig it up well first and prepare the soil," says Almon Wheeler of Santa Clara county. Some of his trees planted six years ago didn't grow and didn't die. So he dug among the roots and found big oak roots that had been left in clearing the land. He found one walnut tree on top of an oak stump 3 feet in diameter. Either dynamite all the stumps so as to pull all their big roots, or grub around them and use a stump puller. If you dynamite either to clear the land or to break up hardpan, do it some months before planting, that is, when the ground is dry so it won't compact and so the soil can

---WHY NOT
START RIGHT?

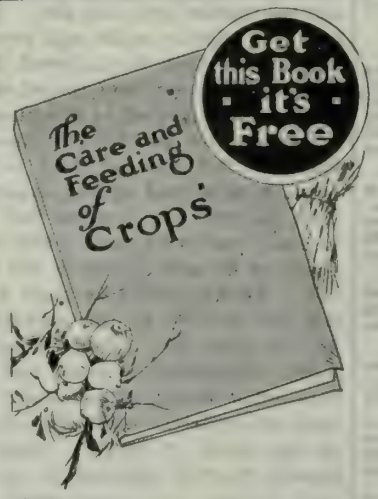
You Can Plant a Tree Only Once.

A mistake in Variety can be cheaply remedied by grafting, but a mistake in root or method of planting can be corrected only by pulling up the tree and replanting with another. The particular hardy, rapid-growing strain of Royal root used by us cannot be purchased elsewhere.

Our Mayette and Franquette
WALNUTS

bring the highest prices paid for walnuts. The quality of our grafted stock then is not a matter of luck, but the result of ten years of experiment and selection. Catalog and price list on application.

Imperial Walnut Nursery
R. F. D. 7 San Jose, Cal.



For Your Own Good

Here are a few facts which will help you to grow better crops—and make a better profit:

"Poor growth, yellowish or light green foliage, and a general lack of vigor in plant or tree indicate need of Nitrogen. Yellowing of the leaves, due to chlorosis, must not be mistaken for Nitrogen hunger."

"Slow maturity, poor formation of grain, seed or fruit and brittle wood growth indicate need of Phosphoric Acid."

"Sour fruit of poor quality, poor yields of root crops or brownish spots and discolorations of foliage indicate need of Potash."

Our service department will gladly answer any letters by mail. Our experts tell you the needs of the different crops under varying conditions.

Send for our Free Book.

It's called, "The Care and Feeding of Crops." The above is an extract of one of the hundred other topics about fertilization.

You need this book. Send for it today. It's free

The Pacific Guano & Fertilizer Company.
804 Security Bldg., San Francisco, Cal.

THE OLD RELIABLE

San Dimas Citrus Nurseries

Established 1890
Incorporated 1913

Citrus Trees Exclusively

All Leading Varieties

REMEMBER, MR. PLANTER

Practically anybody can grow a citrus tree, but it takes years of experience to produce a tree that will prove a money - maker when it comes into bearing. Nice-appearing nursery trees are desirable and promising, but do not always prove to be good bearing trees in the long run. Plant for profit and not for appearance only. Our trees are straight, thrifty, well rooted and have strong, full heads, but the main consideration is that: Our buds are carefully selected from heavy fruiting trees, and will prove true-to-name revenue producers.

OUR TWENTY-FOUR YEARS

of experience in the growing and handling of citrus nursery trees gives the buyer the advantage of starting out RIGHT, thus avoiding disappointment at the end of four or five years' labor in bringing the young orchard into bearing.

ANOTHER POINT TO CONSIDER

Growing a good tree is only part of having it do well after planting. Many a good tree is ruined in the taking up from the nursery and shipping. We give the best of service in the proper handling and delivering of our trees.

WRITE,

'phone or call on us before buying your trees. Tell us your wants and we shall be glad to give you the benefit of our wide experience as to planting, soil conditions, fertilizers, etc.

Our illustrated new booklet on citrus culture mailed to any address upon receipt of 25 cents.

QUOTATIONS GLADLY GIVEN

San Dimas Citrus Nurseries

(INCORPORATED)

Established in 1890 by R. M. Teague

SAN DIMAS, California U. S. A.

Teague trees are started right, grown right, and shipped right

aerate. Then, if you can't wait for winter rains to melt all the clods to the bottom of the loosened dirt, turn in irrigation water for the same purpose. By all means level the orchard for irrigation before planting. The Cutting Orchard Co. of San Joaquin county is leveling in an old peach orchard. The work is slow and there is more or less barking of the trees. J. R. McCuen of Los Molinos has found that unless the land is leveled first, it takes much more water, and parts of the field are too wet before the rest gets enough. The best one can do is to make tortuous ditches at great labor if he wishes to wet the ground right all over.

In dynamiting a sub-layer of hardpan, G. E. Fetters of Sacramento county has found that it is best to bore the holes by hand so one may know when he first hits the layer, and when he has a hole through it. Then tamp in enough dirt to fill the hole half way up through the hardpan and when the charge explodes you break the whole layer without leaving a pocket in the softer earth either above or below it. A pile driver for punching the holes will be described later. It does the work much more rapidly but you can't tell just where you are at.

Have the whole orchard well provided with drainage before you plant. A young tree is especially susceptible to cold feet. For the sake of the orchard when it comes into bearing, do not plant it where the water-table lies within six feet of the surface.

With the land ready for the plow, if holes for the trees have been dynamited, set a stake at each end of the first row so you can find the holes easily afterward. Then don't plow, but disk the field thoroughly and deep as A. C. Pennington says they do in Modoc and Shasta counties before they plow. This cuts up all the clods so that only fine loose dirt is plowed under after the disking is done.

Now is your best time to get air all through the subsoil so plant food may be produced there by bacteria and so the roots may get it more readily, and so the subsoil will hold more water for dry times. Subsoil the field now with whatever method you choose, if it will leave no clods under the surface. A clod keeps open air spaces in the ground. The moisture dries out of the soil quickly for some distance around it. Roots in its neighborhood are helpless and you are paying rent or interest on unproductive land.

After the plowing and subsoiling are done, disk and harrow and mash the clods until you sink to your shoetops as you walk over it. We have seen orchards in this shape (when the soil was dry, of course,)—more work will be required in stiff soils but more need for it too—and it can be done to better advantage before the trees are planted. Then fineness of soil way down can be maintained while the young orchard thrives under the most ideal conditions. This is a lot more work than most people are accustomed to, and that is why many fruit growers are so hard up. It is one of the greatest reasons why other fruit growers are making a splendid success.

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Among the first flowers to bloom in the Spring—

Narcissus --- Daffodils

Always beautiful — easily grown and inexpensive — plant some in your garden now.
Our New 1915 Bulb Catalog Shows All the New Varieties and Latest Importations

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a bed of glory. A package of Morse's Pansy Seeds will work a transformation in your garden

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Lovers of Sweet Peas will find in our new illustrated 1915 catalog many helpful hints for growing and interesting descriptions of the latest novelties.

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Why not grow them? No better market present or future for any California product. 70% of walnuts consumed in the U. S. are imported.

Our Franquette and San Jose Mayette Trees

Grafted on native California Black root are late blooming, not frosted and practically immune to blight. See article in Pacific Rural Press of November 7th on our walnut orchard at Morgan Hill. Be sure to see samples of our nuts and investigate our trees before ordering elsewhere.

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Trees for sale and samples of nuts also at

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The Natural Plant Food and Permanent Soil Builder.

1000 lbs per acre once in ach four years will cost about $1 00 per acre per year At Penn. State College $1 05 invested in Rock Phosphate gave increased yields of $5 85—over 500%. At Maryland Ex Station $1 96½ gave $22 11—over 1000%. At Ohio Station each dollar paid for itself and gave $5 68 profit At Illinois Station $2.50 gave the same return as $2.50 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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BOOKLET on "CORONA DRY" Arsenate of Lead free for the asking.

NOTE

We are advised that the European war is forcing the price upwards. An immediate purchase of your needs appears advisable.

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No More Troubles

For service, satisfaction, efficiency and durability the Deming Spraying apparatus can not be equaled. A Deming does away with your spraying troubles.

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A new form of Sulphur—100 lbs. equals a 600-lb. barrel of lime sulphur. Less cost, less freight and better in every respect.

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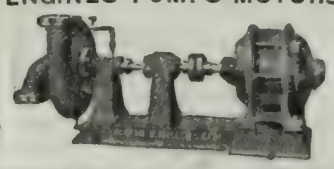

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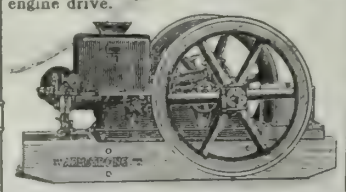

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NORMAN B. MILLER CO.
503 MARKET STREET
San Francisco. Cal.

Agricultural Review

CITRUS AND SEMI-TROPICAL.

Orange growers in Florida are marking their boxes this year, stating the numerical count and the diameter of the fruit contained in each box.

Orange packing will very probably start in the Porterville section this week, as the fruit is ripening up well and it is thought will reach the government standards by the middle of the month.

Citrus growers in the Lincoln district have organized the Lincoln Citrus association and expect to handle the bulk of the orange crop from that section this year. The association will affiliate with the recently formed Superior California Citrus Fruit Exchange.

A thousand-acre tract near Oakdale, Stanislaus county, is to be planted to oranges in the near future by a company of San Francisco parties. The tract adjoins that of the Orange Blossom colony, where oranges have been grown on a commercial scale for a number of years.

The olive crop on the J. D. Edwards ranch near Reedley is now being marketed for pickling purposes. The product from this ranch was formerly made into oil, but has been grafted over to Manzanillas and is now claimed to be one of the best producing orchards in central California.

According to George Roeding of Fresno, this is the first time in ten years that buyers of pickling olives have been so slow to start buying. He attributes this to the financial conditions throughout the country and says that the olive industry will continue to grow in spite of the temporary setback. Unless buyers begin operations before the heavy frosts, growers will probably sell to the oil works in considerable quantities.

Orange growers in northern California are complaining seriously of the new government ruling regarding standardizing of citrus fruit, on the ground that the ruling was announced after the packing forces had been assembled and many orders for oranges taken. They state that the investigators did not look into conditions in the northern part of the State and for that reason are working an injustice to the northern growers. Their Thanksgiving market has, they claim, been ruined on this account and they are fearful that their Christmas markets will suffer accordingly. They expect to enter a protest at Washington, asking that the ruling be modified so far as this year's shipments are concerned.

DECIDUOUS FRUITS AND NUTS.

Two carloads of apricots were shipped from Hollister last week by the Rosenberg Bros. Packing Co.

Announcement has just been received that the Oregon State Horticultural Society will hold their 29th annual meeting at Medford, Oregon, December 2nd, 3rd, and 4th. Fruit growers from all parts of the State are invited, special rates having been allowed by all railroads.

County horticultural commissioner Earle Mills of Butte county has entered a complaint with the supervisors of that district in which he states that horticultural authorities will not report the presence of insects in their localities, notably those from the State of Oregon.

The prune market in the Santa Clara valley has showed an upward tendency during the past week according to J. B. Morrell, of San Jose, who says that the already small tonnage held by growers has been reduced considerably. It is understood that there are very few lots that could be purchased last week for less than a 5¼c. basis.

About 2500 cars of apples had left Watsonville up to the beginning of this week and the daily shipments were averaging 40 cars a day at that time. Most of them are being put into cold storage on account of the poor market. A large tract of land formerly owned by Irwin Griffiths, in Colusa county, is to be cleared of oak and eucalyptus trees and planted to almonds.

GRAPES AND RAISINS.

A contract has been let for the planting of 75 acres to Thompson Seedless and Sultana grapes on the Brim ranch near Williams. This will double the vine acreage on that ranch.

With the Malaga grape crop off their hands for the season, packers in the San Joaquin Valley are now busily engaged shipping the Emperor crop. The Emperor season is expected to close about December 1.

In a statement just issued by the California Associated Raisin company it is shown that the total returns from the 1913 raisin crop handled by that company amounted to $6,187,117.78, of which the growers were paid $4,325,899.44.

Wine grape growers in Napa and Sonoma counties have recently held meetings to take up the matter of better prices for their grapes. It was thought that prices would be better after election, but so far there does not seem to be any move on the part of the wine makers to improve conditions.

Representatives of the eastern advertising agency which is to handle the advertising campaign of the Associated Raisin company, stated, while on a recent trip to Fresno that they believed the California raisin would be a recognized necessity in all eastern homes through the efforts which are now being put forth by the Associated company.

FIELD CROPS.

The sugar beet factory at Anaheim, Orange county, has been closed for the year, after having had one of the most successful runs in its history. Beets were handled this year from 7,000 acres.

The heavy rainstorm which visited the Imperial valley early in the month did a great deal of good to the barley crop, which was already well above the ground.

A vigorous effort is to be made near Klamath Falls, Oregon, to improve the portion of gluten in Oregon grown grain, seed selection being practiced in order to aid in such work among the farmers.

WALNUTS

Grafted and Top-Budded A Leading Specialty

We are the only nursery that has made a success of top-budding the walnut, and invite investigation. There is no finer stock in the State, and all of our stock is propagated from known bearing trees. Careful planters will take heed of this. Please write or call.

PEDIGREED FRENCH PRUNES Blenheim Apricots.. Ornamental Stock in Pots. Landscape Gardening a Specialty.

LEONARD COATES NURSERY COMPANY
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TREES TRUE TO NAME. The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES

Get In On a Rising Market

With the demand rapidly increasing, making them most profitable, there is no better investment for the wide-awake fruit grower than

SHIPPING PLUMS

We have a complete assortment of all the good varieties on Myrobolan, Bitter Almond and Natural Peach Seedling Root.

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TREES TRUE TO NAME. The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES

Scalefoe Kills

Scale on Trees, Shrubs and Bushes also
The Red Spider and other Insects, Worms and Bugs
Does Not Hurt the Plant or Tree
Quart, 20 cts. 2 Quart, 35 cts. Gallon, 50 cts.
5-Gallon Can $2.00, freight paid
Special prices by the barrel.
Correspondence solicited

West Coast Seed House
116-118 E. 7th,
LOS ANGELES, CAL.

TEACHING PAYS

Teachers Receive From $70 to $150 Per Month and Have a Pleasant Occupation - Free Catalog

PREPARE AT

WESTERN NORMAL
STOCKTON, CAL.

MANURE
CARLOAD LOTS.
HORSE, COW or SHEEP.
Fresh or Well Rotted.
Call or write
PACIFIC MANURE & FERTILIZER CO.
420 Davis St., San Francisco.

The Spreckels Sugar company are offering $5.50 a ton for sugar beets to the farmers of the South San Joaquin district for next year's crops. Several farmers there have made preparations for growing beets next year on that account and it is expected that a large acreage will be planted.

Rice growers in Butte county are contemplating the introduction of a bill at the next legislature to annul the protection afforded the black bird under the present law. It is claimed that these birds are a serious meance to the rice men, eating heartily of the rice and also scattering water grass seeds badly.

Estimates are being made by rice growers in Butte county that the 16,000 acres of rice being harvested in that section will yield about 650,000 sacks of grain. The season for harvesting has so far been very favorable and it is thought that the bulk of the crop will be harvested before any rain damage can take place.

Hop growers from California, Oregon and Washington met on November 7, at Salem, Oregon, where they formed the Pacific Coast Hop Growers' association and elected officers for the ensuing year. The association claims to control a big part of the hops grown on this coast and hopes to improve marketing conditions as well as look after the interests of the hop growing industry in the west.

Barley buyers have recently shipped 3,000 tons of barley from Merced county to Port Costa, from where it will be exported to foreign countries. The average price paid for this grain was from $1 to $1.05 net to the grower. That barley is beginning to move in many sections is evidenced by the fact that 1200 tons of barley were also shipped from Oakdale last week at prices about the same as above mentioned.

POTATO NEWS.

The shipment of sweet potatoes from Turlock has been about finished for the year. The yield there has been average this year and prices ranged around 90 cents a hundred.

According to the U. S. Department of Agriculture, sweet potatoes yield on an average 180 bushels to the acre while Irish potatoes yield but 150 bushels on the average in this State.

California potatoes will be allowed entrance to Oregon and Washington markets providing they have been passed upon by Dr. A. J. Cook. The quarantine against California tubers is still on, however, in Canada and Idaho.

FROSTY NOTES.

The San Joaquin Valley suffered its first severe frost last Saturday, the temperature being 30 degrees in Stockton.

Mr. Call of Corona says that one gallon fire pot per tree is not enough for a long cold night because the soot collectors ought to be taken off if extremely cold so the oil burns faster to produce the extra heat needed.

Napa Valleyites are wide awake to their need of frost prevention and are buying more heavily of firepots than many other sections that need them as badly. Some of them have lost their past two crops of prunes and peaches.

Joe Brown of Hollister kept the temperature of his 24-acre apricot orchard at 34 degrees, when outside it was 26 degrees, using a one-gallon heater at alternate trees. He had a heater at every tree, but didn't need all of them that night.

If you are going to fight frost and aren't equipped yet, remember that the manufacturers of frost pots are not keeping much of a stock on hand due to financial conditions and uncertainty of demand. If you want them in time for frost, better order now, for the material comes largely from the East. First orders are the first and surest filled and you don't have to pay for them till delivered.

GROUND LIMESTONE
For Agricultural Purposes

Our ground limestone may be applied to the soil at any time during the winter season. It is especially beneficial before seeding to alfalfa, beans, peas, or any leguminous or cover crop.

Lime corrects acidity; promotes the growth of soil bacteria; makes available the plant foods, nitrogen, potash and phosphoric acid; makes clay and clay adobe soils looser; makes sandy soils more compact, increasing their water-holding power, and in general makes the soil a healthier medium for plant growth.

You can get immediate deliveries from us either in bulk or sacked. Write us for further information, prices, etc.

Western Rock Products Co.
Balboa Bldg., San Francisco, Cal.

200,000 FEET CHEAP WATER PIPE

Just received several car loads of new and 2nd hand Water Pipe, Oil Well and Water Casing. In ½, ¾, 1, 1¼, 1½, 2, 3 inch and many other sizes. O. D. Casing 2, 3, 3½, 4 in. Riveted and surface irrigation pipe. Big Stock. Prompt shipments. Lowest price. Write, phone or wire.

ADAMS PIPE WORKS.
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Phones Brdy. 1264—F1917
(Under entirely new mngmt.)

Cherry Trees

Cherries are the first, the most attractive and the best fruit of the summer season. This, together with the fact that they are very profitable, yielding from $400 to $600 an acre, makes them a good "buy" for any fruit grower in position to raise them.

Our block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.

THE SILVA-BERGTHOLDT CO.
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TREES
Grown on Sandy Loam Soil

No Spike Roots.
Almonds on Almond & Peach root.
All Varieties of Fruit Trees for sale.
Write for Special Prices.
Land for sale in large and small tracts on small terms. We plant and care for orchards and guarantee a stand of 95%.
Plenty of water.
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"BEST IN THE WEST"
IN EASTERN CONTRA COSTA COUNTY, East of Mt. Diablo
63 Miles from San Francisco
Soil and Climate Unexcelled
Suitable for Alfalfa, Fruits, Nuts, Dairying, Poultry and Hogs
PRICE $300 AN ACRE, Including Water Right
Write today for illustrated folder, map, etc.
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TREES

French and Imperial Prunes, Bartletts and other Pears; Tuscan and Phillips Clings, Fay Elbertas and other Peaches Cherries, Plums, Apples, Grafted Walnuts, etc. Stock pure and of best strain. Place orders promptly. Prices reasonable.

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Bolton Orchard Heaters

One gallon size 20c
Two gallon size 27c
F. O. B. Your Station
Write for our new booklet R. P
Absolute Protection Against FROST DAMAGE

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OUR SPECIALTY: BONE AND BLOOD FERTILIZERS.

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SALES OFFICE AND SHOW ROOM, 105 NO. LOS ANGELES ST.
(Ask your Dealer or Contractor)

Mechanical Power on the Farm.

AUTOMOBILE RUNS SAW.

[Written for the PACIFIC RURAL PRESS.]

Over in Stockton they are building a fine new schoolhouse. Many of the timbers had to be resawed, but there was scarcely enough to require installation of a gas engine to run the saw. So the contractor's automobile was drafted into the service in a very simple and effective way without connecting to the drive gear at all.

A buzz saw about two feet in diameter in a tilting frame which works in a ready-made wooden frame, was fastened to a heavy plank platform for steadiness. It was connected with a shaft having two iron wheels a foot in diameter and six inches wide spaced the same distance apart as the wheels on the contractor's 30 h. p. Studebaker automobile. The rear wheels of the auto rested a little past center on these pulleys, the front wheels were blocked by a plank firmly set in front of them, and strapped down by the hubs to the plank platform on which the outfit rested. When the auto engine started the rear wheels they turned the shaft pulleys simply by their weight and the timbers were ripped at will.

Connections.—A platform was built almost on the ground by which the machine could run up onto and over the shaft pulleys which projected slightly above it. The auto wheels were about 34 inches outside diameter, running the 12-inch iron shaft pulleys. On one end of the shaft was a wooden pulley 6 inches wide and about 26 inches in diameter. A 5 inch belt connected this with another wooden pulley a foot in diameter about 6 feet back of the auto. On the same shaft with the last named pulley was an iron one about 9 inches in diameter in the lower part of the saw frame. This was connected by a short upward sloping belt to a 4 inch pulley on the same shaft with the saw and just under the saw platform. By such a system, the auto might run slowly and generate great speed in the saw. If a smaller auto were used, it would perhaps need less increase of speed in the gears, for that requires extra power, but could make up for its lack of power by increased speed of its own wheels.

There are certain objections to using a pulley wheel in place of a rear wheel as some people do for such odd jobs, but here there is no wear on machine or tires or transmission parts except what would come from use on the road. Whenever the saw was needed, they would run the car onto the platform, strap the front wheels down, and start the engine. When the work was done, the auto simply backed off without changes or adjustments.

This scheme could be worked on many farmers' woodpiles, feed grinders, silage cutters, pumps, etc., without investment in extra engines or motors.

LITTLE TROUBLES WITH GAS ENGINES.

[Written for PACIFIC RURAL PRESS.]

We recently stopped to see E. E. Potter of San Joaquin county, who has disconnected his windmill from the well and installed a 2½ h. p. Sterling distillate burning engine to run a little centrifugal pump. The engine was balky. Sometimes the carbureter would flood and distillate would run all over. The excess of fuel would blacken the exhaust until the distillate was about all gone, for of course it had to be shut off at the tank when it flooded.

Sometimes it wouldn't flood, but would just die a peaceful death and quit chugging with all stopcocks open. A long stick was run into the tank and the settlings stirred away from the inlet to the pipe running to the carbureter, and that resulted in flooding the carbureter. The distillate was pretty dirty, and having not been strained as the tank was filled, the dirt shut off the supply at the strainer over the inlet end of the pipe. The carbureter bowl was taken to pieces. It contains a metal bulb with a steel wire "needle" which runs through the bulb vertically and rises with it when the bowl fills with fuel. The needle fits into a valve seat in the nipple onto which the fuel pipe screws on the cap over the carbureter bowl. This nipple seemed to have been broken off, for there was no valve seat for the needle to fit into when the flow should be shut off.

Similar flooding trouble had been doctored not long before when it was found that the bulb leaked, had filled with distillate, and so couldn't rise to shut off the flow. Solder fixed it. The cause of many such leaks is the punching of the float by means of the loose pin through the cap, which indicates by its rise and fall whether the float is working properly.

B. G. Ellingwood, another San Joaquin county man with another Sterling engine, was discovered by his brother absolutely unable to start it. The brother tried everything about the engine and at last found the carbureter loose where fastened to the cylinder. A new gasket stopped the leakage of air which had made the mixture too lean to explode. Mr. Ellingwood later found a friend, who couldn't start his distillate engine, though about at the limit of his energy and patience. The trouble was that he didn't know it is necessary to give the cylinder or carbureter a dose of gasoline for a starter. Distillate does not vaporize ready enough to explode on the first round, though vaporizers have been recently invented.

THE LAMB SHOULD HAVE WELCOMED THE LION.

To the Editor: I have just read your editorial column in issue of 7th November, and wonder whether in your opinion Belgium would have offered armed resistance to the nation you characterize as highwaymen, had she known that she would not receive any assistance whatever from any other nation.

Has it occurred to you that if Belgium's so-called Allies had given her the support that she had been led to expect, the situation in Belgium would be entirely different today?

Have you noticed in your daily newspapers statements to the effect that conscription is now threatened for the Belgians, and have you ob-

bigger profits

The Yuba Ball Tread Tractor — bigger profits—the use of one means the realization of the other.

Careful designing, the use of high-grade materials, and accurate construction reduce the cost of maintenance to a minimum.

The Yuba Ball Tread Tractor is built to stay built: every part is able to stand much heavier strains than can possibly be put on it in the course of service; wear on each part is very slight in proportion to the work done; but should it become necessary to replace any part, it can be done at small cost, in the field, by the operator. The elimination of big repair bills and the fact that The Yuba Ball Tread Tractor can be used for hauling, or as an emergency stationary power plant, every day in the year, make it an exceedingly profitable investment.

THE YUBA BALL TREAD TRACTOR

As a business precaution you should investigate the Yuba Ball Tread Tractor. This booklet points the way to bigger profits.

For convenience, use the coupon.

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THE YUBA CONSTRUCTION CO.
433 California St., San Francisco
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Gentlemen: Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name.....*P. O. Box*.....

Town.....*State*.....

Size of Farm.....*Acres.* *(Check main crop raised.)*

Fruit ..... *Rice* .....
Grapes ..... *Alfalfa* .....
Grain ..... *Hops* .....
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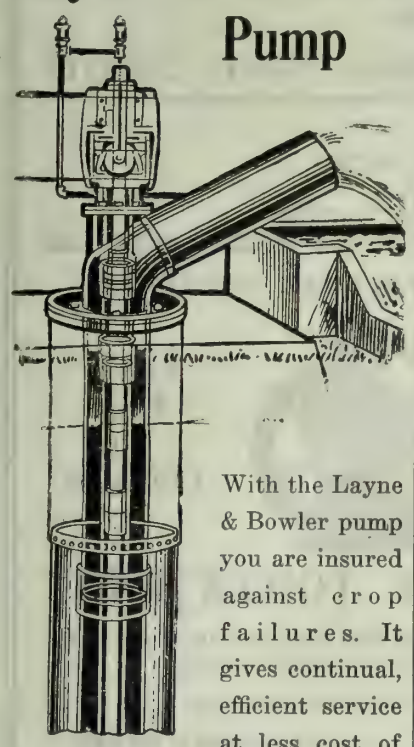
The Wise RANCHER

Will not wait until Spring to install his pumping system. Now is the logical time to decide. Let the world's largest water developers solve your pumping problems.

Layne & Bowler Pump



With the Layne & Bowler pump you are insured against crop failures. It gives continual, efficient service at less cost of operation. Positively the most economical pump in operation. Constructed to meet your particular requirements. No pit required. No intricate mechanism. Stop experimenting, eliminate troublesome pumping problems and obtain the cheapest water by installing the

LAYNE & BOWLER PUMP

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served any protest from her so-called Allies against this measure?

Does there seem to you to be any evidence that these Allies have from the commencement of the war used Belgium for the goat, and are still using her and are largely responsible for her present condition through their failure to render the substantial assistance that seemingly the Belgians had been led to expect of them and had relied upon?

It is probable that none of these ideas have ever suggested themselves to you. Evidently not, since you have taken upon you the responsibility as editor to refer to the Germans as highwaymen, and to convict them of precipitating "the most colossal injustice the world has ever seen."

I have been a subscriber to the Pacific Rural Press for upwards of ten years and have, until recently, enjoyed reading the paper, but editorials such as the one that appears in November 7, to me, at least, are exceedingly distasteful.

I shall be obliged if you will drop my name from your list of subscribers. WM. E. LINGARD.

Santa Barbara.

(We thank you for the decade of your favor and support and accord you the right of public declaration of dissent from the views which we have expressed. When we can no longer condemn national wrongs which cry to heaven, whether committed by your country or ours this journal will have outlived its usefulness.—Editor.)

AVOCADOS, NUTS AND FIGS

To the Editor: Are alligator pears grown successfully in this part of the state? English walnuts? Which variety of fig trees would you recommend (for shade and fruit) for planting around a hog pasture?—T. H., Escalon.

[The alligator pear or avocado will stand a few degrees of frost, especially the thin-skinned varieties, which are of superior flavor, but are not so large or suitable for transportation as the thick-skinned varieties. Shnabel Bros. of Newcastle, Placer county, and the Bangor Development Co. of Butte county have several acres, but we do not know how they are thriving. We know of none in your part of the State.

Dr. W. W. Fitzgerald of Stockton has done much good work on walnuts and could recommend varieties suitable for your climate. A moderately heavy, deep, well-drained soil is needed for walnuts and for your section a variety should be chosen which bears its nuts under heavy foliage to avoid sunburn, and which blooms late enough to escape spring frosts. The Franquettes and Mayettes will probably give satisfaction. Consult Cal. Expt. Sta. Bul. 231 at your library.

You seem to expect the hogs to eat most of the fig fruit, in which case white Adriatic will be about the best because it bears heavily and the fruit is likely to sunburn. Most figs drop to the ground when ripe, so the Calimyrna variety, which does not fruit so heavily, would not be satisfactory, for the hogs will get all that drops.—Editor.]

Buy a good boar and keep him. When breeding for the market it is a shame to sell a proven boar as long as he will breed.

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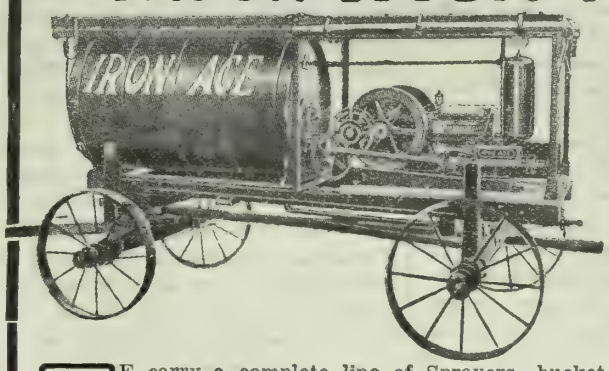
With an IRON AGE



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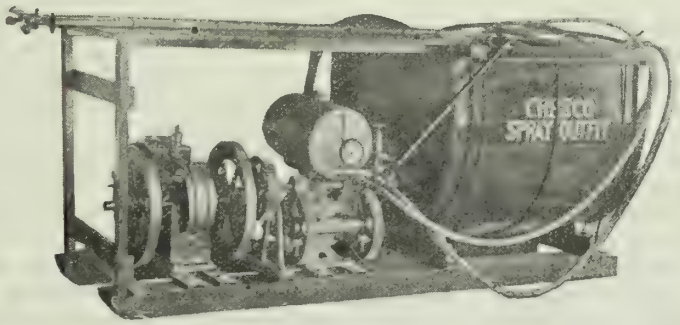

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With the Livestock Men

Several cows affected with blackleg have died during the past week in Glenn county.

Railroad officials claim that there are now 25,000 head of beef cattle on the way to California from Arizona and New Mexican points.

The first silo to be built in Glenn county was recently erected by A. E. Slocum. With the increasing interest in dairying in that vicinity more will probably follow.

The McLaughlin Horse Importing Company of Oakland has recently sold a fine Percheron stallion to parties in Gonzales, Monterey county. The price paid was said to be $4,000.

At a sale held by J. B. Agnew in Tulare county last week, five of his registered Shire mares were sold for a total of $3,000, to Judge Bridgeford of San Francisco.

The creameries in Fresno county paid out $96,000 for fat received during the month of October. This is an increase of $6,000 over that of the previous month.

Steps have recently been taken to start a creamery or condensing plant at Salida, Stanislaus county. It is claimed that the owners of about 3,000 cows have promised their support.

Several farmers in the Watsonville section report outbreaks of hog cholera during the past month. Vaccination is being done and late reports state that the disease has been checked.

That the membership of the California Cattlemans' Protective Association may be increased in the lower San Joaquin valley, a meeting is to be held at Bakersfield this week by officers of the association.

A shipment of 15 carloads of cattle was received last week from Hachita, New Merico, by the Kern County Land Company at Bakersfield, which will be finished for market on that company's ranges.

The directors of the Imperial County Fair have made provision for a butterfat contest to be held at their fair this year, offering three prizes for cows four years and over and three prizes for cows two years and under.

Cattlemen staid longer than usual in the mountains above Truckee this year, due to the fine weather which has prevailed there. A report from that place however, says that the last herd to leave passed through there last week.

After many years' work the cattle men of Cooperstown have finally been granted a rate on carload shipments of cattle from that point to Oakdale, of $10 a car. This will overcome considerable loss as the long drive has previously been hard on the stock.

In his October report, J. F. Grass Jr., tester for the Yolo county cow-testing association, states that there were 12 cows in the association which produced 50 pounds or better of butter fat last month. The highest record was made by a Holstein cow owned by Lindsay Morris.

Community breeding is a subject which will be taken up by several farm advisers in the near future, and this in connection with their work of organizing cow testing associations should be a big step in the right direction. There are many dairymen who want to breed better cows but do not feel justified in buying a registered bull for so few cows.

The cattle market at the Portland Union Stock yards last week was steady to strong on all classes, although receipts were again short. Some good steers were sold during the week, the general price being $7.00 to $7.15 for tops. The hog market was again strong, closing at $7.20 for tops. There was good average receipts and quality for the entire week.

Sheep receipts were light and demand excellent, top lambs selling at $6.35, all other lines being strong to higher.

In a letter to this office Ed. E. Johnson, of Turlock, reports that he has recently sold four registered Guernsey cows and a registered bull to Joe Levy, Manteca, and registered Duroc Jersey boars to the following: C. R. Beamer, Phoenix, Arizona, W. S. Salisbury, Los Molinos, Groth Bros., Longnale, W. M. Stevens, Turlock, Gallatin Ranch, Red Bluff, A. L. Cheney, McFarland, R. D. Burns, Stratford, Aug Siblom, Turlock, and E. Walstrom, Turlock.

The annual meeting of the National Wool Growers' Association closed last week after a number of important matters had been taken up. Among the resolutions adopted was a request of the department of agriculture to establish standards for American wool, and the convention authorized its officers to arrange for an official standard auction of rams under the direction of the association. For the first time in many years there was little said on the tariff subject except to recommend that a reasonable duty be placed on imported wool.

As announced in these columns last week, the cow Tilly Alcartra, owned by A. W. Morris and Sons of Woodland, has broken the world's record for milk production, having finished her test with 30,452.6 pounds of milk containing 951.3 pounds of fat. This is 861.4 pounds more milk for the year than was produced by Creamelle Vale, the former world's record cow, and being made by a five-year-old animal, as the Morris cow is, leaves room for improvement in her own record in future years. This record, with those of Riverside Sadie and Aralia De Kol, gives the Morris herd three out of the six highest milk-producing cows in the world.

CALIFORNIA JERSEY CLUB NEWS.

In a letter to this office from Secretary J. E. Thorpe of the California Jersey Breeders' association he states that the Jersey Futurity stake number two is being filled and that entries will close December 1. Entry blanks can be secured by applying to Mr. Thorpe. The association is also completing plans for a seven day test for economical butter fat production, to be held at the Panama Pacific Exposition next year. The following classes will be made, a $50 cup or cash being offered in each class: class 1-4 years old or over, class 2-30 months and under four years, class 3-under 30 months. This should prove an interesting contest to all and be highly educational in nature.

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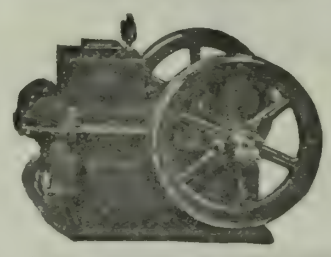
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Don't Feed Butter Fat to the Hogs
To get every ounce of butter fat from your milk, the bowl of your separator must spin swiftly and smoothly. This requires a special oil. The oils you use on your other farm machinery are not suited to the delicate, high speed mechanism of the separator.
Standard Hand Separator Oil
is of just the right body to quickly reach those finely adjusted, close fitting bearings. That is why it will give you perfect lubrication. If a better separator oil could be made, we would make it. Dealers everywhere.
Standard Oil Company
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Breeding for Efficiency.

[Written for PACIFIC RURAL PRESS.]

The slogan most popularly expressed by the heads of all manufacturing concerns is, "Lessen the cost of production." While the manufacturing of butter fat cannot be accomplished by improved machinery as is the case with most other commodities, the cost of production can be materially reduced and efficiency increased by using better bred sires and in this way increasing the annual production, without increasing the cost of raw material to any appreciable extent

That dairymen do not as a general rule appreciate the value in dollars and cents realized from the use of purebred bulls with transmitting powers back of them, is the conviction of a practical dairyman and breeder in this State, who is using the following arguments among his grade dairymen neighbors, with the idea of building up the industry in his particular locality.

In the first place this man has been a strong advocate of the co-operative cow testing association as he believes that in this way the dairymen will be able to check up the results secured from the use of the better bull, as well as enable him to cull his cows more intelligently.

Selecting at random a dairyman whose herd average in the association has been three quarter pounds daily, he shows that man how he can increase that average one quarter pound daily by using a better bull. This he is able to do by pointing out other members of the cow-testing association who have had equally good results, as may be seen by consulting the association's records.

Now a quarter of a pound of fat does not sound much to a person, if taken singly, but when multiplied by 30, the usual number of cows to the herd in his section, it looks like a good deal. For instance he shows the neighbor that with 30 three-quarter-pound cows his daily revenue at 30 cents a pound for fat is $6.75. But that little quarter pound increase brings that revenue up to $9.00 daily. From the pound basis he goes up to the pound and a quarter average which means $11.25 daily revenue. To those who are the least bit skeptical about securing such result through the use of better bulls alone, he again points to those association records which do not lie.

As a final peg, for it should be said that herds having more than one and a half pounds production are pretty scarce even in the associations, he has figured what the pound and a quarter herd will produce with a quarter pound more fat. Here he points out that the herd produces 45 pounds of fat daily, worth at the same fat price, $13.50.

In making this increase he points out that all the dairyman need spend in actual money is the difference in price of three registered bulls in place of three grade bulls, which is, when divided among 30 head of cows, a very small consideration.

After showing how the daily returns may be increased, the difference between $6.75 (the revenue of the three quarter pound cows) and $13.50 (the daily revenue of the pound and a half cows) he goes still further and shows that there has been no material increase in the cost of maintenance, that the milker at $60 a month would milk the higher producing herd for the same price as he would the poor herd and the cost of feed for the pound-and-a-half herd would be practically the same as for the three-quarter-pound herd.

In summing up then he finds that 30 cows can be maintained and milked for $165, figuring alfalfa hay worth $7 a ton and milker at $60. From the herd averaging the smaller named amount the monthly gross revenue is $202.50 while that from the heavy producing one is $405 monthly, or a difference of $202.50 clear profit every month for the good breeding. Carried out into the total for the year the difference is almost staggering, but he points out, it has been done and still is being done

Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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O. I. C. SWINE—The White Breed. Entire herd immunized against hog cholera. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars in use. All stock sent out will be immunized, registered and crated at purchase price. Send your orders now. C. B. Cunningham, B. J. Mills, Sacramento County, California.

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TEN REGISTERED HOLSTEIN COWS for sale. Young and more with big records. Also a few well-bred heifers and bulls up to nine months old. K. W. Abbott, Milpitas, Cal.

REGISTERED HOLSTEINS—Young bulls sired by King of Riverside and Lakeside Model Prince from A. R. O. dams. J. H. Harlan Co., Woodland.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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Draft Horse Sale a Benefit.

[Written for the PACIFIC RURAL PRESS.]

Few attempts have been made by any livestock association in this State more worthy of support than the one now being made by the California Draft Horse Breeders' Association, in its effort to hold annual sales of purebred draft horses.

In this work the association believes that it will be better able to put the purebred horse breeding of the State upon a higher basis than it has ever before enjoyed, due chiefly to the fact that farmers and breeders alike will be furnished with a market at which either to buy or sell good sound breeding stock.

This bringing of buyer and seller together has been a difficult task in past years, not only with female stock but with high class stallions as well, with the result that while we have a number of fine females in the State which breeders would dispose of at a moderate figure, there has been no way for the farmer to learn of their whereabouts, when in need of such animals.

The same thing has been true to a large extent with home-bred stallions, breeders finding it difficult to sell such animals at a fair figure unless aided by the horse salesman who has become a familar figure in our rural districts, and whose commission naturally adds considerable to the price for which the horse is sold, unless perchance the breeder is willing to stand the added expense, in which case his profit in raising has been done away with.

There is another factor which has oftentimes discouraged farmers in purchasing registered stallions, and that is their inability to sell such animals at a reasonable price, when they can no longer use them. Many times these horses are proven breeders and just in their prime and assuredly of worth equal to an untried horse, yet their owners are unable to get anywhere near their value, although their service to the horse industry of the State has only begun.

According to officers of the association, most of these difficulties will be overcome by the establishing of a permanent sale, as the only charge to either seller or buyer will be the comparatively small cost of auctioneer and advertising fees.

In the case of the stallions which can no longer be used by a farmer or company of farmers, it is suggested that others in the same circumstances will be glad to purchase, offering their own at that same time. In other words, there will be an opportunity of exchanging these horses at a very small cost, and their value to the State will in this way be considerably lengthened.

There has never been a more appropriate time for the holding of such a sale than the present, for there is little question but that the European conflict will shut off all importations of breeding animals for many years to come, or at least so reduce such importations that our stallions must be bred and raised at home, almost exclusively.

From letters and inquiries received from prospective buyers it is evident that the plan has met their favor, and the association is now busily engaged in securing consignments, an auctioneer, and in doing other preliminary work. They are anxious however to get in immediate touch with all purebred draft horse owners desirious of disposing of same and a letter to secretary J. I. Thompson, Davis, California, will bring further information.

MILO MAIZE AND MILK COOLERS.

To the Editor: Are milo maize stalks harmful to cows after all of the grain has been taken off except the secondary small heads with small amount of grain on them? Will it pay to cut them and feed with alfalfa hay or let the stock clean up what they will in the field? Can an oil stove be kept in milk house for heating water to wash milk utensils, if milk or cream are kept in the same room, without tainting the cream or milk? What is a cooler for cooling milk?—B. J. B., Orland.

[Sorghum stalks are not injurious unless eaten in excess, when they are apt to cause indigestion like other coarse fodders sometimes do. There is no poison in them as there is sometimes in rank green sorghum. Sorghum stalks are sometimes siloed after the grain heads are gathered because sorghum has the habit of holding juice in the stem longer than Indian corn, which is generally counted not fit for siloing after the ears ripen. In siloing sorghum stalks it is desirable to use some water in filling and pack down very tightly.

If possible it would be better to have oil stove and washing utensils in a separate room from where milk and cream are kept, as there are few oil stoves that do not give off some odor. Such room need not be expensive, a lean-to shed being suitable in case you do not feel able to build a better structure.

A milk cooler is used for the purpose of reducing the temperature of either milk or cream. They are sometimes made in conical shape and sometimes in riffle shape, the object being to run the warm milk over a water and air cooled surface.

By running a thin sheet of milk over these riffles, the air itself lowers the temperature somewhat, but to further cool it, the utensil is so made that a continual stream of water is run inside the vessel, thus reducing the temperature of the milk to about 50 or 60 degrees F. if freshly pumped water is used.

Most any of our advertisers who handle dairy supplies can furnish you with illustrations and price list of the coolers that they handle, and you will find that the cost is a very small item.

Their use is advocated, as the animal heat is at once taken out of the milk or cream, and the keeping qualities of same are very noticeably improved. Where whole milk is to be sold, it should be poured over the cooler as soon as possible after being milked, but if butter fat is sold to the creamery, it is better to cool the cream alone as it runs from the separator into the cream can.—Editor.]

Study the bull's pedigree carefully after studying his conformation. The records back of his sire and dam tell the story of his qualifications as a herd sire better than any other one thing. All registered bulls are not result-getters; scrubs never are.

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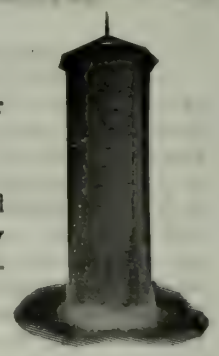
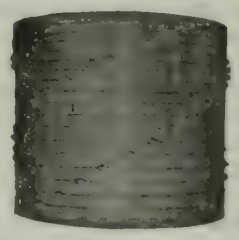


This is a Photo of the 12x36 Redwood Stave Silo manufactured and erected by us on University of California Experimental Farm, Davis.



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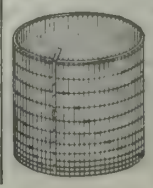

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Barley for Dairy Cows.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

To the Editor: Have heard that barley will dry up dairy cattle. Is this true? I am feeding all the alfalfa hay the cows can eat and want to balance the ration with barley, but am afraid to unless the above report is untrue. Can you give me the proportions of alfalfa hay and barley to make a balanced ration? Can you use milo maize with alfalfa hay to balance the rations and if so what proportions? Would it be better to mix alfalfa hay, milo maize and barley? Are the stalks of milo maize poisonous when cut and wilted before feeding?—W. C. S., Glenn, California.

[Barley will not dry up milch cows. It is a standard grain feed for cows in North European countries and is also fed by many dairymen in this country, especially here on the coast. A cow in the University dairy herd has been fed rolled barley as the only grain feed, with green alfalfa or alfalfa hay, for the past 5 months and has produced more milk and maintained her production better on this feed than ever before. May 28 to June 25, this cow produced 48.09 pounds of butter fat, and Sept. 17 to Oct. 15, 46.79 pounds. I mention this only as an example of the high value of barley as dairy feed, especially when fed supplementary to alfalfa. 20 to 25 pounds hay (or 30 pounds green alfalfa and 15 pounds of alfalfa hay) and 5 pounds of rolled barley make an excellent ration for dairy cows producing an average amount of milk, say 20 pounds of milk. It is generally a better plan to give 2 or 3 concentrated feeds to dairy cows instead of a single one, and ground milo mixed with an equal weight of rolled barley, will be likely to give almost as good results as barley alone. The stalks of milo or other grain sorghums are not poisonous when cured into hay or put in the silo, nor are the green stalks themselves poisonous unless stunted by draught or frost.]

BREWING GRAIN VALUES.

To the Editor: What feed value has fresh malted barley (brewers') for cows? What value has it for hogs and how long will it keep and be good to feed? What amount should be fed to cows? And what amount to hogs to obtain the best results?—F. P., Santa Rosa.

[Wet brewer's grains are fed mostly to milch cows and make an excellent feed for these animals as they have a favorable influence on the milk secretion. Fed in small amounts they are also a good feed for brood sows for the same reason, but are not well adapted for feeding to hogs in general on account of their bulky and fibrous nature. The grains must be fed near the place of manufacture on account of the large amount of water which they contain (70 to 80 per cent), and their relatively small proportion of food materials. It is also impracticable to ship them any distance from the brewery on account of the danger of their spoiling. One cannot figure on their keeping sweet and fresh more than a couple of days in warm weather, but the air temperature and method of storage will determine how long they will keep.

There is no better feed for milch cows than wet brewers' grains when they are fed fresh and in moderate quantities, not over 30 to 40 pounds a day per head, with hay or other dry roughage, and under sanitary conditions, keeping the mangers and stable scrupulously clean. Such conditions have frequently not prevailed in the past, hence the feed has come into disrepute, and their use in dairies has often been prohibited by health authorities. They may, on the average, be considered worth about one-fourth as much as dried brewers' grains pound for pound, and somewhat more than one-fourth as much as wheat bran, small grains, etc.]

PUMPKINS FOR COWS.

To the Editor: What are pumpkins worth per ton when fed to cows with alfalfa hay? Cows are capable of giving one pound of butter per head on alfalfa hay and green corn.—R. D. W., Colusa.

[Pumpkins contain on the average about 7.5 per cent digestible feed components, while alfalfa hay contains about 53 per cent, a ratio of 1:7. As it requires somewhat more energy for the digestion of a dry, coarse feed like alfalfa than for root crops, and similar feeds, it is likely that it will not take as much as 7 tons of pumpkins to equal 1 ton of alfalfa hay in nutritive effect, but we are doubtless safe in assuming that a ton of alfalfa hay of good quality will go as far in feeding dairy cows as about 6 tons of pumpkins. On this basis a ton of pumpkins would be worth $1.50, with alfalfa hay at $9 a ton.]

A set of by-laws and a constitution were recently drafted by Guernsey breeders for the new California Guernsey Cattle Club and the following officers elected: Wm. H. Saylor president; C. S. Rasmussen, vice-president; D. O. Brandt, secretary-treasurer. All persons interested in this breed are invited to become members, and the club has made it possible for a breeder to become a life member upon payment of a small fee. Address all communications to D. O. Brandt, Owensmouth, California.

The interest on investment in additional barns will more than pay the cost of chopping alfalfa hay on the average ranch. A barn that will hold 300 tons of chopped hay will not hold more than 100 tons of loose hay.

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I will sell this horse cheap if sold soon. For further particulars write me or come and see the horse.
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Geo. A. Smith's 5th Sale of Registered Stock
CORCORAN, CAL. SATURDAY, DEC, 12, 1914

Another One of the Many Good Ones.
HOLSTEINS THAT SATISFY. Cows with Records—Heifers, Fresh and Coming Fresh—Yearlings—Calves and Bulls. GOOD WISCONSIN HOLSTEINS that produce Milk and Butter in Paying Quantities. REMEMBER the animals in This Sale have been sired by 28 different sires, each one a Good One. Look over the partial list of sires and grandsires appended and arrange now to attend the BIG SALE where Holsteins combining TYPE-PRODUCTION and PREPOTENT BLOOD will be sold at Bidder's Prices. KING SEGIS, HENGERVEL DE KOL, SARCASTIC LAD, DE KOL 2D'S BUTTER BOY 3RD, JOHANNA COLANTHA LAD, JUDGE HENGERVELD DE KOL, PONTIAC HENGERVELD PARTHENEA, DUCHESS ORMSBY PIEBE BURKE, JESSIE MAIDA PAUL DE KOL BURKE and other famous sires will be represented by their Sons, Daughters, Grandsons and Granddaughters. Don't fail to get some of these REAL HOLSTEINS with TWO GOOD SIDES TO THEIR PEDIGREES and make yourself and your herd famous. Sell some of your Boarders and get some MONEY MAKERS.
WRITE AT ONCE FOR SALE CATALOGUE—IT WILL TELL THE WHOLE STORY
Geo. A. Smith, Corcoran, Cal.

Hillcrest Stock Farm
DAVIS, CAL. T. S. GLIDE, Prop.
Breeder of Shorthorn Cattle, French Merino and Shropshire Sheep.
At 1914 State Fair our Shorthorns took first prize in every class we entered except two, and in these were beaten only by stock of our blood. We took all the herd prizes, first and second prizes in produce of cow and first in get of sire.

KING LANCASTER, 3 times Grand Champion
Below is a list of our Grand Champion bulls for the last eleven years—a list that will stand for quite awhile:
1904—Hillcrest Hero
1905-1906—King Edward (Also Grand Champion World's Fair at Portland.)
1908—King of Greenwood
1909, 1910, 1911—King Lancaster
1912—Greenwood Knight
1913—Greenwood Knight
1914—Greenwood King
All except the first two of the list were bred by us. We have beaten a number of bulls that were bought in the East at prices ranging from $500 to $3000 and brought out here to beat us.
Range raised young bulls for sale, single or carload lots.

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Poultry for Profit

[Written for the PACIFIC RURAL PRESS.]
By Susan Swaysgood, Pomona.]

One of our subscribers sends an inquiry about the value of shutting up his turkeys for fattening. Now the value lies not only in the fact that they make more flesh when not allowed to run around too much, but in the quality of the flesh. The meat is tender and more palatable than when the birds have been allowed to run.

Fattening Turkeys.—Two or three weeks before it is intended to sell is time enough to shut them in; if kept in longer they invariably fret and lose what they have gained before.

Before they are put in yards there should be a good high perch or two provided for them and if they can be given some litter to pick in it will satisfy them. It is better not to feed anything at all for a day or two in order that the appetite will be fresh. All kinds of soft feed will be eaten with a relish if it is diversified. Change the ingredients a little and also the method of serving. If you feed a mixture of shorts, ground corn, and bran one meal, the next meal leave out the bran and substitute ground barley or oats, and the next meal boil some small potatoes or other vegetables and mix the ground meal in the hot liquid. Always make palatable with salt and if milk is on hand mix with sour milk as often as possible. This adds a relish to the food and causes the birds to eat much more than they would if served the food all in one way.

But the very best ration to serve for supper is cracked corn or Kaffir corn. Whole corn takes a long time to digest; cracked corn lasts a shorter time and brings the birds to breakfast with a better appetite than if given whole corn at night.

Soft feed given at night passes through them too quickly and they get restless, hence it is policy to feed some kind of grain at night. Kaffir corn does not possess quite as much fattening quality as the larger varieties but it is cheaper and does very well, provided they eat enough of it. And therein lies the whole secret of feeding, to induce the birds to eat all they can get away with under restricted exercise, and keep them as contented as possible.

Never allow dogs, or strangers with highly colored clothing around stock you are trying to keep quiet, because such things excite them and makes for loss rather than gain in flesh.

Plenty of clean water and even keeping the feed troughs clean has an influence on the birds' appetites; a sour smelling feed trough turns some birds away from the feed hungry, while others don't perhaps mind it. Green feed is another appetizer, and the more it is varied the better, as with the other rations. Poultry are a good deal like people, their appetite soon gets clogged when fed all one kind of food, served in one way.

The last few days serve a tablespoonful of any kind of clean grease to a full grown turkey in the feed, once a day. This is a great help in making the quality of meat and if you raise turkeys to sell year after year your customers soon learn that your fat turkeys are of the best table quality.

There is one place where you can always be sure of pleasing a customer, through his stomach. Most anybody knows when he eats something that tastes good, or better than usual, and he is bound to come back to get the same quality when he can get it.

There are not many turkeys to put on the market this year, for whole flocks have been decimated with chicken pox. So those who have them should get a good price, if they put them on the market right.

Grading the Stock.—After raising and fattening them right they should be separated and cooped according to size and condition of fatness; as the price of the whole package will very likely be that of the poorest birds in it, if sent to market mixed. Besides, there is no money in shipping poor birds that don't weigh enough to count; put them out and let them graze around until they get in a condition to fatten. Nearly all commission men will pay a better price for graded stock than they will for a coop that is sent in mixed. If they have to sort them out you can rest assured that you will pay for their trouble and that is only right. We don't any of us want to work for nothing. Every merchant has to strive to please his customers or he makes few sales, and there is no reason why the farmer or poultryman should not do the same as the merchant, and send his product to the market in as up-to-date a manner as possible.

Correspondence.—This is another point in the marketing of produce, that needs attention. Never ship your birds to a firm before you have had some correspondence with them relating to the shipment. Because the reckoning will be easier and better on both sides. Ask questions, such as what days are best to ship on, giving any information you can as to distance from shipping pont.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

TO THE POULTRY FARMER—We now have under construction a modern Hatchery, and are booking orders for BABY CHICKS from our heavy laying strains of S. C. White Leghorns and White Plymouth Rocks. We solicit your order for 1915 delivery, and know that you will be well pleased with the high quality of our stock. Write for prices on Sept. and Oct. hatched pullets, and year-old hens for breeders. Hopland Stock Farm, Hopland.

MACFARLANE STRAIN White Leghorn Eggs. $5.00 per 100, chicks Jan., Feb., $12.00, afterward $10.00. Order now, any quantity Cockerels, $2.00; White Rock eggs, chicks, cockerels. Write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. N.B., See article about us by Prof. Adams, U. C., in October "Poultrycraft."

MAHAJO FARM offers old and young stock, in small or large lots, in White Rocks, Black Minorcas, White, Brown and Buff Leghorns, and Indian Runner Ducks at reasonable prices. Address Mahajo Farm, P. O. Box 597, Sacramento.

MAMMOTH BRONZE TURKEYS—Large reductions offered on old stock for short time only. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

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RED BOURBON TURKEYS for sale. First prize winning birds. 3 pairs breeders 1½ and 2 years old and younger stock. Some fine young Toms and pullets. A. E. Balmer, Alhambra Valley, Martinez.

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INCUBATOR CHICKS—White Rocks and White Leghorns. High class stock. Send for booklet of prices Mahajo Farm, Box 597, Sacramento, Cal.

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by Susan Swaysgood,

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160 Pages of Text Book

should be in your home if you are interested in poultry. It will help you in the egg production, in hatching and raising the chicks. Tells how to feed properly and how to keep your flock free from disease. It is a California book, written by a poultry woman after many years of successful experience in this State.

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THOMAS HATCHERY. Petaluma, Cal., Route 6.

Shipping the Birds Alive.—If birds are sent alive put a watering can in each coop, made fast so that express men can water. They don't always do it, but it is part of the service you pay for when shipping, and if anything happens from their neglect and you can bring it home to them you can collect. Bringing it home to their neglect is, of course, another matter but we do the best we can and make everybody's part as easy to manage as possible and await results.

Write directions as plain as possible and tack on one end of coop with instructions as to return of coop. These little things all count and don't take many minutes at your end of the line. When your shipment arrives it creates a good impression on the dealer, who gauges your intelligence by the manner of shipping your produce; and if he happens to be dishonest he gauges how much he can fleece you out of. It is always best to give the turkeys or poultry a good feed before leaving home and not put feed in coop. It gets trampled on and is not likely to be eaten by stock that have been well fed, but the water can is a necessity.

Dressing for Packed Shipment.—If by chance you are too far from market to ship alive, then it is a case of sending dressed. All turkeys and poultry to be sold dressed in this State must be dry-picked; no scalding goes. So you must plan to kill at one time just what you can pick before they get cold. The latest in killing poultry in order to bleed well and make the feathers come easy, is to cut under the throat, just beyond the hollow of jaw, and send the knife right up into the mouth, giving it a slight twist. This makes the blood flow freely and loosens the feathers. Two pickers can work on a good sized turkey, one on the breast, and the other on the back and wings. In this way, if the work is done indoors, a turkey can be picked in a very few minutes. A few feathers are left on the tip of each wing and the animal heat must be gotten out of the body before packing. No drawing or cutting off legs, or anything. All the commission men ask is that the birds be kept without food for twenty hours before killing. And when we consider the difference in price between dressed turkey and live turkey, figuring in cost of transportation, it seems funny to me that all farmers don't dress their own and make the profit. Turkey killing time comes at a time when other work is slack and I think good wages could be made right at home for boys and girls.

This, of course, you would have to take up with the commission man you shipped to before venturing, but as I said before, there should be some correspondence and a definite understanding before shipments are made, whether shipped dressed or alive.

THE REDWOOD CITY POULTRY SHOW.

The San Mateo County Poultry Association held their show at Redwood City this year, in the gymnasium building. The show was cooped by the Spratt Company. About 700 birds filled the coops to overflowing, and the quality was above the average throughout. W. S. Russell judged the show, and he remarked in a number of classes that the quality found would be on a par with some of the larger shows.

In handling the barred Rocks class, the judge said, "this is the kind of birds that win in Chicago," as he picked up a barred Rock pullet belonging to Chas. Voden of Los Gatos. Mr. Voden not only breeds one but breeds them by the score, and won all firsts. Thornton T. Green of San Mateo won the lion's share in the white Rock classes, 1st cockerel attracting the attention of all who attended the show. It is a grand bird.

Arthur R. Schroeder of Mountain View was on hand as usual with his trap-nested white Leghorns and buff Leghorns, and made good winnings, including 1st white Leghorn cock, also best colored cock in the show. C. M. Uhlenberg of Redwood City showed a big string of golden Wyandots. He has secured the best stock he could get in the east and will sell eggs in season.

Geo. Lohr of San Francisco won special prize for best Langshan. He takes great interest in these big, meaty birds, having the Royal strain.

F. Stader of San Mateo exhibited Toulouse geese and turkeys, winning 1st on goose and 1st on gander. M. S. Woodhams of San Mateo showed Butter Cups and white Orpingtons, winning 1st, 2nd and 3rd on pullets, 1st, 2nd and 3rd on hens and 1st on pen with the former and 1st and 2nd on pullets, 1st cockerel, and special for best colored bird in the show on a pullet with the latter named breed.

POULTRY NOTES.

Although entries do not close for the San Francisco poultry show until November 25, Secretary E. J. Talbot reports that entries are coming in rapidly and that from the looks of things the show will be much larger than even the most sanguine had hoped for.

The indications are that the rabbit entries will be several times larger than at any show ever held on the Pacific coast, which speaks highly for the interest that is being manifested by breeders.

The children's pet stock exhibit is creating widespread interest and this department will probably eclipse anything of the kind ever attempted in America. The State Game Farm will send about 100 exhibits to this department. Entries for all classes should be sent to E. J. Talbott, Mutual Bank Bldg., San Francisco.

Poultry breeders are attending the Petaluma poultry show this week and will hold forth at Oakland next week. Plans are also being made for a big show at Modesto which follows the Oakland show.

The Haywards Hatchery of Haywards is fitting up the second story of their building for incubators with which to help supply the demands being made upon them by the trade. The lower floor of their building is already full of 500-egg capacity machines.

G. H. Grupe of Stockton is showing some classy barred Rocks this season, and won special for best barred Rock at the Stockton show, also best display.

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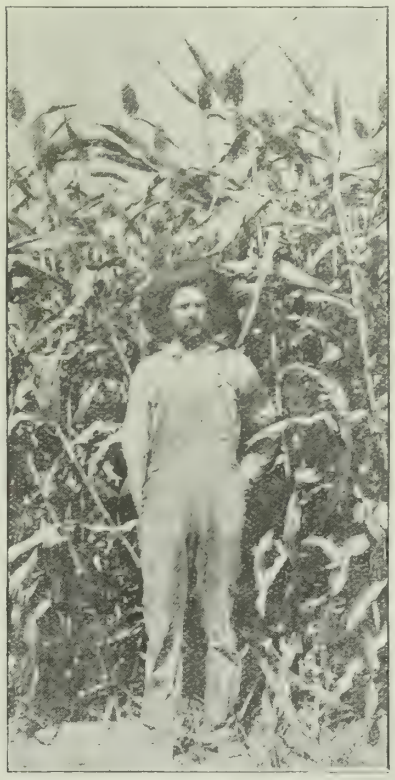

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Here is a picture of Mr. Dyer in his field of Milo Maize. Planted July 5th, picture taken October 9th. In twelve weeks the stalks grew ten feet high.. They are well set with big, full-bodied heads.

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The Home Circle

THANKSGIVING.

The ripe, rosy apples are all gathered in;
They wait for the winter in barrel and bin;
And nuts for the children, a plentiful store,
Are spread out to dry on the broad attic floor;
The great golden pumpkins that grew such a size,
Are ready to make into Thanksgiving pies;
And all the good times that the children hold dear
Have come round again with the feast of the year.

Now, what shall we do in our bright happy homes?
And what do you say is the very best way
To show we are grateful on Thanksgiving Day?
The best thing the hearts that are thankful can do
Is this: to make thankful other hearts too;
For lives that are grateful, and sunny, and glad,
To carry their sunshine to hearts that are sad;
For children who have all they want and to spare,
Their good things with poor little children to share;
For this will bring blessing, and this is the way
To show we are thankful on Thanksgiving Day.

—Selected.

THREE THANKFULS

By Kate Hudson.

She was the deservedly popular class teacher from whom they learned literature and many other good things, and she had promised each one of them a Thanksgiving keepsake if they would find time during the glad day to run in and call for it. That is why Adelaide, booted and veiled for an all-day's auto trip, was unwrapping the small, flat package Miss Carr had handed her first young visitor.

"It was good of you," remarked Miss Carr, "to spare me five minutes of your holiday; and I wonder whether it's too early in the morning for you to know just what you're most thankful for?"

"Oh, I know what I'm thankful for, all right," laughed Adelaide. "We're all very thankful it's such a fine day, and still more thankful it's not blowing a gale, so's we may enjoy our trip. I'm also much obliged for this pretty motto, which is just the thing for my room," she concluded, repeating as she fastened her gloves, "Many can brook the weather who do not love the wind." Then she ran rapidly down the front steps and climbed into the family-filled auto, which meanwhile had drawn up to take her in.

It was late in the afternoon before Peggy turned up for her motto, at the end of the short, brisk walk which had been absolutely necessary to help settle, as she carefully explained, "the enormous dinner" she had eaten. She also eagerly undid the parcel she had gratefully received from Miss Carr, and readily answered the question as to what she was thankful for with an enthusiastic panegyric on her just consumed Thanksgiving dinner for which she was giving "devoutest thanks." "Such a turkey!" she concluded. "Why it must have weighed quite seventeen pounds, and, oh, how good it was! and such pie and such ice-cream and such nuts and raisins! And I'm ever so much obliged for this lovely motto —let's see whether I can read it; it's Scotch, isn't it?—

'Some hae meat and canna eat,
And some hae nane that want it;
But we hae meat and we can eat,
Sa let the Lord be thankit!'

which I'm going to hang in the dining-room, oposite my place at table, where I can always look at it. Goodbye, Miss Carr, good night!" Peggy was off.

It was nearly seven before Lissie called for her kepsake. "I really couldn't get here any sooner," she informed Miss Carr, apologetically, "because Tom and I are only just through washing the dinner dishes. You see, we made Mother lie down on the sofa and visit with Auntie Sue and Dick and Nell, while we cleared the table and washed up and set the supper-table; and there were such piles and piles of dishes it took lots of time. I can't stay but a minute either, because I've got to help make up beds for our three visitors; and here's an orange you must taste, 'cause it's one of seven—just one apiece—Dick brought with him for us. He got them from a man who had them sent up with a lot more from Florida. It's good, Miss Carr; I'm sure you'll think so."

"Yes; but, my dear," demurred that lady, "if there's one orange apiece, I must be eating one that some one of you should have had, and I don't want to do that! Who's orange is this?"

"Yours," smiled Lissie. "It was mine; but Tom shared his with me so's I could bring it to you. And, oh, Miss Carr, we have had such a perfectly happy day with Aunt Sue on from Buffalo and Nell from Philadelphia and Dick from Chicago; and they're all going to stay until tomorrow evening, and it seems 'most too good to be true!"

"But where in the world are you going to put them all?" asked Miss Carr. "How can you accommodate seven people in one small apartment?"

"Oh, well, we don't mind doubling up a bit," declared Lissie, cheerfully; "but it's a bit of a problem. We'll make up some sort of a bed for Auntie Sue—that's why I have to hurry home for to help so mother won't have to,—and Tom'll make room on his couch for Dick, and I'll tuck Nellie in with me. We're all together once more,—for two days, anyway,—Father and Mother and we four children and Father's favorite sister,—Aunt Sue, you know,—and a bit of trouble and a bit cramped sleeping quarters don't matter much, anyway."

"Your mother must have had her hands full getting dinner for so many," suggested Miss Carr.

"We all turned to and helped," said Lissie, "so she shouldn't get too tired. Aunt Sue set the table, and Nellie cleaned vegetables and peeled the potatoes, and Tom brushed up the rooms and dusted,—you'd be surprised to see how nicely that boy can do it,—and helped me do the beds. Dick turned the ice-cream freezer, and I twirled round and helped wherever help was needed. We were busy, and, oh, so hungry when at last dinner was ready! It

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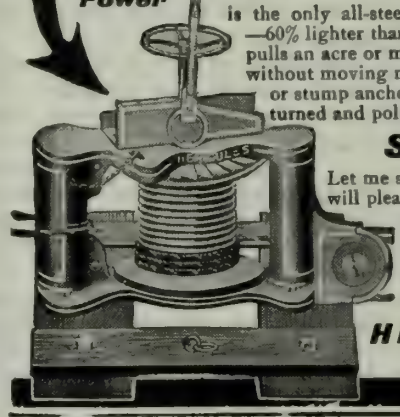

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was fun to see that big dinner disappear! And poor father was no sooner through carving the first seven platefuls of turkey before he had to start right in on the second helping; and really we had 'most as much fun cooking our dinner as eating it, and I do think Thanksgiving is about the best day in the year, unless, perhaps, it is Christmas. Oh, thank you ever and ever so much, Miss Carr!" flushing rosily as she began to undo the package handed to her.

"You've had such a busy holiday," smiled Miss Carr, "that you've hardly had time to feel thankful."

"I feel thankful all through," Lissie assured her earnestly, "because we were all home together once more, all well and all together. And thank you ever so much for the lovely card, which I'm going to hang where all of us can see it right up above Mother's sewing machine." And slowly and reverently she read:

"Home is where there's one to love,
Home is where there's one to love us.
So let's give thanks for Home!"

CURING OLIVES AT HOME.

[Written for PACIFIC RURAL PRESS.]

For the benefit of the many subscribers who are asking us how to pickle their own olives, and for those who find difficulty in selling them how, we reprint from the Pacific Rural Press of December 27, 1913, the method used by P. H. Steude of Yolo county:

"This recipe is one of my own invention. I have pickled tons of olives which sell and taste much better than the commercial article.

"I usually use a sugar, vinegar, cider or glucose barrel as olives adopt all foreign flavors from barrels where whisky, brandy or red wine has been.

"I bore a hole in one end of bottom of the barrel. Then make a long 10-inch point on a broom handle, with which to close the hole. By tapping on the broom handle you can have the lye or water drawn off without getting your hands wet, or letting the olives drop out of the hole.

"Olives should be cherry color for pickling. In this way they have a good flavor and are appetizing. I consider the Mission olive the best for home use. It is best to not mix the olives from different trees as some trees have more bitter ones than others. This accounts for having some bitter olives among the sweet usually found in Yolo and Sacramento counties.

"When you pick olives get them into clear water as soon as possible. Never use ditch or dirty water, as olives absorb the mud and are easily spoiled. Olives picked into lug boxes will mold in 24 hours.

"Dissolve 1 pound concentrated lye and 1 pound pure salt in 2½ to 3 gallons of water, and see that it is thoroughly dissolved, then skim. Then drain all the water from olives, tighten the broomhandle and pour the preparation of salt and lye over them. Weight the olives down so as to keep them covered. In 12 to 48 hours the bitter will be entirely removed from them. I draw off the preparation and fill in on top again about once or twice a day to find out if the bitter taste is all out of them. If you see milk on them, by cutting them open you find the bitter still. For further test, you can wash off a few olives, and bite, being sure to keep your lips away from them. Spit out at once and rinse your mouth with clear water. As soon as the bitter taste is out turn in clear water. The first few days change 4 or 5 times a day, and 2 to 3 times a day for about 10 days or till the lye is all gone.

"Should they get a little soft put a strong salt brine over them for 24 hours and then wash in clear water afterwards. I usually have olives to eat in one week from the time they are picked, but there is still a little lye in them.

"To keep the olives a long time, use 12 ounces of salt brine to a gallon. That will make a potato swim. Olives should be in a dark place and covered with brine or water. By keeping them a long time a scum should rise to the top and should be skimmed off, and the olives rinsed in clear water and put in new brine. If olives are too salty, lay them in water for a few hours and they will be ready to eat.

"This preparation is strong enough to take the color out of the dark olives. They will not look as well as the commercial, but are far superior in taste. To get a dark color in the commercial olive the coloring matter has spoiled the taste to a certain extent."

[In this connection it may be stated, as it has been stated several times previously in these columns, that ripe olives can be considerably darkened by exposure to light for a brief time—the olives being taken out of the brine and exposed in shallow traps for this purpose.—Editor.]

S. B. Onyett of Palermo picks his olives for home pickling when they are "just a little ripe," soaks them in lye water for 24 hours, drains them and puts on new lye water, and repeats the operation again, using a wooden tub that drains from the bottom. He tells when the bitter is all out by cutting the flesh to the seed. It is not a uniform color if the lye has not soaked clear through and in such case he keeps them in lye water till the bitter is out. Then he soaks the olives in clear water with a little salt, changing it twice a day till the lye is all out. This may be told by the taste. A little delay is permissible while the water is off until the olives have been properly darkened by the exposure to air. Waiting till olives are riper before pickling would give the color, but makes them too soft to stand the processing.

After the lye is out the olives are cured in a barrel in salt water, being careful not to salt it too much to taste good. Most directions for olive pickling say to skim off the scum that forms on the brine. But an old friend of the Press who has made a special study of olive processing here and abroad, says to leave it on, that the scum is comparable to the "mother" on vinegar in process of making. He says that it is the headquarters of bacteria which really cure the olives by fermentation with the most desirable flavor instead of simply salting them.

Mr. Onyett believes that everyone who owns but a few trees ought to cure his own olives. He put up 400 gallons last winter and sold them in small lots all over the U. S. Some were shipped in five-gallon wooden lugs as far east as Utica, N. Y., and Michigan. Others were sold in gallon lots to the big cities of California. We noted last spring how Mr. Rogers of Placer county sold his olives from the wagon through the country without the expense of packages.

In the Southern States the winter standby is turnip "salad," made by cooking tops and the young turnips from seed sown in the fall. To those who like the turnip taste, they are very acceptable greens, as frost does not hurt them. Soil should be moistened, then worked as fine as possible and the seed broadcasted. Rich soil is not required, but fineness and moisture are. No cultivation is usually needed.

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The Markets.

San Francisco, Nov. 18, 1914.
(Unless otherwise noted, prices quoted are f. o. b. San Francisco.)

WHEAT.

Coast markets show less excitement than for several weeks past, but there is still a good export movement, and with light local receipts this market remains firm, though rather quiet. Values stand as before.

Cal. Club, ctl.	$1.90 @ 2.00
Forty-fold	2.00 @ 2.05
Northern Club	1.90 @ 2.00
Northern Blue'm	2.10 @ 2.15
Northern Red	1.95 @ 2.10

BARLEY.

Speculative business locally is rather quiet at present, but there is a fairly active movement of the spot grain in the country, and current values are quite well maintained.

Brewing & Ship'ng	$1.20 @ 1.25
Choice Feed, per ctl.	1.17½ @ 1.22½

OATS.

This market shows little feature at the moment, the demand for seed being fair, while feed offerings receive only moderate attention. The shortage in other quarters, however, keeps prices on a firm basis.

Red Feed	1.45 @ 1.50
Seed	1.65 @ 1.90
Gray	Nominal
White	1.55 @ 1.60
Black Seed	1.75 @ 2.25

CORN.

Eastern corn is freely offered for shipment, but spot offerings are pretty steadily held, with a limited demand. Egyptian finds a fair demand at the old range of values.

California Yellow	Nominal
Eastern Yellow	$1.80 @ 1.85
Eastern White	Nominal
Egyptian White	1.67½ @ 1.70
Milo Maize	1.65 @ 1.70

HAY.

Current arrivals are running about as before, being ample for all requirements, but still of rather poor average quality. Fancy hay in fact is scarce everywhere, and commands a considerable premium. Buyers seem to be taking a little more interest, as prices seem to have about reached bottom, and hay is now being withdrawn from the country warehouses. Export business continues, but has no great effect on the market.

BEANS.

Considerable revision of prices is noted, but the market, on the whole, remains quite firm, several lines being higher. Shipments are going forward in good shape, with a steady demand in the eastern markets, and notwithstanding the large crop it looks as if values would be pretty well maintained at something like the present level. There has been considerable demand from South America, as well as from the east. Limas are finding a particularly brisk demand in the Atlantic district.

(On wharf.)

Bayos: Cal. per ctl.	$4.25 @ 4.50
Blackeyes	3.75 @ 4.00
Cranberry Beans	3.65 @ 3.75
Horse Beans	3.50 @ 3.75
Small Whites	3.90 @ 4.00
Large White	3.75 @ 3.90
Limas	5.15 @ 5.25
Pink	3.00 @ 3.10
Red Kidneys	5.00 @ 5.10
Mexican Red	4.75 @ 5.00

SEEDS.

Alfalfa shows a wider range, with increased offerings of ordinary stock. Other lines unchanged.

FLOUR.

Northern mills have made a further advance in prices, but no change has been made locally so far.

Alfalfa	16 @ 17 c
Brown Mustard, per lb	Nominal
Canary	10 @ 12½c
Hemp	3½ @ 4 c
Millet	2¾ @ 3¼c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal
Cal. Family Extra	$6.60 @ 6.80
Bakers' Extras	5.50 @ 6.00
No. 1 Wheat, or Wheat and Oats	$9.00 @ 11.00
do No. 2	6.00 @ 8.50
Barley	5.00 @ 7.50
Tame Oats	6.00 @ 12.00
Wild Oats	6.00 @ 8.00
Alfalfa	6.00 @ 9.00
Stock Hay	4.00 @ 6.00
Straw, per bale	30 @ 45c

FEEDSTUFFS.

Bran has been advanced a little in the north, but there is plenty here at present and the local price is unchanged. Other lines are steady as before, with only a moderate demand.

Alfalfa-Molasses Meal, per ton	$19.00 @ 20.00
Alfalfa Meal, per ton.	14.00 @ 15.00
Bran, per ton	26.00 @ 27.00
Oilcake Meal	33.00 @ 34.00
Cocoanut Cake or Meal.	25.00 @ 25.50
Cracked Corn	42.00 @ 43.00
Middlings	33.00 @ 34.00
Rolled Barley	25.00 @ 26.00
Rolled Oats	32.00 @ 33.00
Shorts	29.00 @ 30.00

VEGETABLES.

A few lines are stiffening up a little on lighter offerings, but most descriptions stand about as before. The most marked change is in tomatoes, supplies of which are much lighter in the last few days, and choice lots bring as high as 75c. Cucumbers also have been marked up a little, and celery from the river districts brings about $1.50 per crate at the inside. The outlook for eastern business, however, is said to be rather poor, owing to large offerings from eastern growing districts. Southern lettuce shows a wider range, with choice lots selling at $1 per crate; and string and lima beans have advanced slightly.

Green Peppers, bell, lugs	35 @ 40c
Green Peppers, Chili	30 @ 40c
Carots, per sack	30 @ 40c
Tomatoes, lugs	35 @ 75c
Beans, Wax per lb	3 @ 4c
String	3 @ 4c
Lima	3 @ 4c
Cucumbers, lugs	35 @ 65c
Eggplant, lugs	25 @ 50c
Summer Squash, box	50 @ 75c
Cream Squash, box	30 @ 40c
Okra, box	40 @ 50c
Celery, doz	20 @ 25c
do crate	1.50 1.75
Sprouts lb.	2 @ 3½c
Lettuce, southern, crate	75c @ 1.00

POTATOES AND ONIONS.

Onions are a little easier at the moment, as some of the river stock was damaged by the rain, and efforts are being made to dispose of considerable inferior stock. Some of the better stock, however, is being shipped to the Atlantic Coast by the Panama route. Delta potatoes of the better grade are a little higher, and Idaho stock is being shipped to California, as well as to Oregon markets. A good many Turlock sweet potatoes are going north.

Potatoes: Salinas, ctl.	$1.40 @ 1.50
River Burbanks, ctl.	50 @ 1.00
Sweet Potatoes, ctl.	1.35 @ 1.50
Onions: Yellow, sack	40 @ 45c
Garlic, per lb.	10 @ 12½c

POULTRY.

Offerings of chickens continue fairly large, but the market shows a little better tone, with an advance on small broilers. Turkeys are receiving more attention, but prices are unchanged. Dealers consider outlook fairly good for the Thanksgiving trade.

Turkeys, lb	20 @ 22 c
do, dressed	23 @ 26 c
Large Broilers	20 @ 22 c
Small broilers, per lb.	22 @ 24 c
Fryers	18 @ 19 c
Hens, large, per lb	17 @ 18 c
Hens, extra, er lb	17 @ 18 c
Small Hens, per lb.	15 @ 16 c
Young Roosters, per lb.	17 @ 18 c
Squabs, per doz	2.00 @ 3.00
Geese, per pair	2.00 @ 3.00
Ducks, doz	$5.00 @ 9.00

BUTTER.

Prices have been gradually advancing for the last week, at least on extras, and with still higher prices in the south there is some movement in that direction. Another shipment of Australian butter arrived this week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31	31½	32½	34	33½	34
Prime	28	28	28	28	28	28
Firsts	26	26	26	26	26	26

EGGS.

Prices have been jumping up and down for the last week, extras being at a level that tends to throw the demand more to lower and storage grades. Buyers show no anxiety for supplies, and a lower range of prices is expected before long, especially as storage and imported stocks are large. A feature this week was the arrival of a lot of Australian eggs.

Extras	52	51½	51½	51	49½	47
Extras	46½	45	46	50	50	47½
Sel. Pul.	37	37	36½	37	35	36

CHEESE.

The only quotable change is a loss of one-half cent on Y. A.'s. Supplies are ample in all lines, but current offerings are fairly well absorbed.

Fancy California Flats, per lb.	16 c
New Young American, fancy,	16 c
Monterey Cheese	15 @ 16c

Los Angeles dairy prices.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	33	33	34	34	34	36
Eggs	42	42	46	46	46	48
Cal. Cheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

The market shows comparatively little feature, the local buying movement in most lines showing little animation. Cranberries are getting a little more attention, but supplies are ample, and values unchanged. Huckleberries are lower, while strawberries and raspberries are rather easy, with a light demand. The local demand for apples is fair, but there is little shipping business, and a constant pressure to sell keeps prices at a low level. Offerings of figs are limited, but receive little attention. though current shipments are pretty well cleaned up. The better offerings of persimmons are higher. Casabas are less plentiful and bring somewhat better prices. Grapes show little change, with ample supplies and a fair demand for attractive stock.

Cranberries, bbl	$8.00 @ 8.25
Huckleberries, lb	5 @ 7c
Strawberries, chest	3.00 @ 5.00
Raspberries, chest	5.00 @ 7.00
Apples, Newtown Pippin	50 @ 90c
Belleflowers	40 @ 65c
Gravenstein	50 @ 1.00
Pearmain	50 @ 65c
Jonathan	40 @ 75c
Crabapples	25 @ 50c
Quinces, box	25 @ 40c
Pears, box:	
Winter Nellis	1.25 @ 1.50
No. 2	65 @ 75c
Other varieties	35 @ 75c
Figs: Black, double layer	1.00 @ 1.15
Pomegranates, box	50 @ 1.00
Persimmons, box	50 @ 90c
Casabas, doz	35 @ 1.25
do lugs	50c
Grapes: Malagas, crate	50 @ 75c
Black	50 @ 75c
Cornichon	50 @ 60c

DRIED FRUITS.

The dried fruit market shows more activity than for some time past, and there is a firmer feeling in several lines. Probably the most interesting development is a sudden call for prunes, which are the only line to show a quotable advance. There has been quite a large export movement within the last two weeks, resulting in renewed activity in the country where sales have been made on the basis of 5c, and better. In view of the light stocks remaining in the country, this has helped out the situation materially, and gives considerable encouragement for the future. Several deliveries of apricots have lately been shipped from the country, and it is said that spot stocks in the east are closely cleaned up. Some apples have also been sold for export in the east, and there is a general feeling that peach prices have reached bottom, which may bring out a stronger demand. Owing to the poor outlook for imported currants, etc., seedless raisins are moving more freely; and the supply of imported Smyrna figs for the holidays is estimated as not over 25 per cent of normal. In general there seems to be a better feeling in the trade through the middle states, and while prices are slow to improve, there should be an all-round improvement when the spring buying starts. The New York Journal of Commerce says: "Coast advices report continued activity in Sultana raisins on inquiries from export buyers as well as the home trade owing to the improbability that any further supplies will be available from Smyrna. The market closed strong, but not quotably higher. In seeded stock of Coast production a moderate amount of business is being done. Outside packers continue to shade the Associated prices, but it is understood that they have comparatively little to offer. Advices received by wire from the Coast, indicating an upward trend to prices of prunes, do not seem to stimulate demand from this quarter for forward shipments. Buyers here are still skeptical, believing that there is a good deal of stock yet held on the Coast which may ultimately be released at prices under current quotations. On the other hand, it is stated by disinterested parties in California that except for the holdings of two or three packers which were accumulated at comparatively high prices, there is little stock available aside from what may yet remain in growers' hands, and some authorities place this at not over 2,500 tons. On the spot here stock is going steadily into consumption on small jobbing orders at prices fully up to the quoted figures, according to well-informed authorities. Apricots are dull on the spot except for a moderate jobbing demand. Advices from the Coast indicate a firmer feeling there as a result of export inquiry. Peaches are moving slowly, but as there is no pressure to sell from growing or packing quarters the tone of the market is steady. Spot figs are stronger and anywhere from a quarter to a cent a pound higher owing to the improbability of any further supplies from Smyrna."

Evap, Apples, 1914	4 @ 5 c
Apricots, 1914	6 @ 9 c
Figs: White, 1914	4 c
Black	2½ @ 2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, '14	5 @ 5½c
Peaches, new	3¼ @ 3¾c
Pears	6 @ 8 c
Raisins (in sweatbox):	
Loose Muscatels	4 @ 4½c
Seedless Sultanas	5 c

CITRUS FRUITS

About all of California's Valencia orange crop has been shipped, so that the markets will soon be clear for Washington navels, which are commencing to move fro mnorthern California districts. However, but a limited number of cars will be shipped for the Thanksgiving trade, most of the packers holding back for Christmas in order that the fruit may be riper and better colored.

At New York the auction markets are in good shape, the prices on Monday last being from $2 to $4.80 per box for Valencias, and lemons sold for $2.50 and $3.10 per box, average. Other auction points were about the same as the above.

Arrivals of new navel oranges at San Francisco have increased considerably, and while the local demand is still moderate, values are held well up to the former level. Valencias are getting scarce, and fancy stock is higher. Fancy lemons also show a slight advance, while grapefruit is rather easy.

Oranges: Navel, box	$2.00 @ 2.50
Valencias, box	2.25 @ 3.25
Tangerines, crate	75c @ 1.25
Grapefruit, seedless, box	2.00 @ 2.75
Lemons, box	1.75 @ 4.00
Lemonettes, box	1.00 @ 2.00
Limes, case	3.00 @ 5.00

NUTS.

The market seems to be working into a little better shape than for the last few weeks, especially on walnuts, as supplies of imported stock for the eastern Thanksgiving trade are light. This, however, has little effect on the numerous scattered lots of nuts still held in the country, as local dealers have their requirements well provided for, and

are not anxious to buy. It is still difficult, if not impossible, to sell miscellaneous offerings on the basis of Association prices. The trouble however, is not so much with the price as with the demand, as few buyers care to increase their holdings at present.

(Association Prices.)

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
Budded	18 c
No. 2	12 c

HONEY.

The market is still in poor shape with constant pressure to sell and only a very limited outlet in the local trade. Values are nominally about as before, with occasional sales, but there is more stock than can be readily moved.

Comb: White	11 @13 c
Amber	7 @10 c
Dark	5 @ 7 c
Extracted: White	7 @ 8 c
Amber	4¼ @ 6c
Off Grades	3 @4 c

BEESWAX.

There is not much business here at present, but dealers continue to quote the old prices.

Light	31 @32½c
Dark	27½ @31 c

HOPS.

Values remain about as before, and there is a little more business, though the market is not active. Several sales were recently made at Ukiah at 8¾ to 9c, and some fairly large Oregon sales are reported at 8 to 11 cents.

1914 crop	8 @10 c

LIVE STOCK.

Cattle remain fairly firm, while calves are in rather light supply, and offerings of lambs have been very light, causing a stronger demand for sheep. Hogs continue to come in freely.

Steers: No. 1	7 @ 7¼c
No. 2	6¾ @ 7 c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5½ @ 5¾c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½ @ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
225 to 300 lbs	7¼c
100 to 225 lbs	7¾c
Prime Wethers	5½ @ 6 c
Ewes	5 @ 5½c
Milk Lambs	6¾ @ 7¼c

MULES

1200 lbs.	$150@200
1100 lbs.	125@150
1000 lbs.	100@125
900 lbs.	65@100

HORSES.

The local market still lacks animation. A few horses have arrived from outside points this week, but it is rather difficult to dispose of any new offerings, and it is evident that the requirements of this market are below normal. It is reported that buyers for foreign interests have appeared in the San Joaquin valley, and this will doubtless tend to strengthen values for some classes of stock.

Heavy drafters, 1700 lbs. and over	$225@275
Light Dra's, 1500 to 1650	200@215
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	60@100
Delivery Horses, 1050 to 1250	1.00@ 1.10

DRESSED MEATS

Steers	10¾ @11½c
Heifers	10½ @11 c
Veal, large	13½ @14 c
Small	15 @15½c
Mutton: Wethers	11 @12 c
Ewes	10 @10½c
Suckling Lambs	13 @13½c
Dressed Hogs	13 @14 c

Publisher's Department

Commencing with this issue the Rural Press will contain thirty-two instead of twenty-four pages weekly. This added number of pages is made possible by an increase of advertising, which we trust will continue indefinitely that the present size of the paper may be continued. The great increase in business, both subscriptions and advertisements, accorded this journal is thoroughly appreciated and we propose to merit its continuance.

In our book department the increase of business is also apparent. Sales of our new book, "California Poultry Practice," are starting out better than anticipated, almost keeping pace with the leader, "One Thousand Questions in California Agriculture Answered," which was issued the first of the year. "California Fruits" is also selling better than ever before, and "California Vegetables" is holding its own in popular demand. When you need farm literature, remember the Rural Press office is headquarters.

We had hoped to have out another new book by the first of December, but Prof. Wickson has not had the spare time to finish his work, that he now expects to have in shape for the printer by Dec. 15th, and we want to have it ready for the trade by the first of the year. This book on "California Garden Flowers" will meet a much needed demand for a practical, popular priced treatise on the subject of flowers, vines, ornamentals, lawns, etc. Further announcements later.

The Use Of Hercules Dynamite On Farm, Orchard and Ranch

Write for a Free Copy of this Book

Every man who operates a farm or ranch should have a copy of "Progressive Cultivation." In its pages many of the problems which confront him daily are solved. In a way it is a text book that points the way to better, more productive cultivation.

Here are a few of the subjects on which it treats, picked at random from the index pages: Air in the Soil, Alkali Soils, Benefits from Subsoil Blasting, Controlling Erosion, Disposal of Stumps, Ditch Blasting, Draining Swamps, Felling Trees, Gully Filling, Handling Dynamite, Rejuvenation of Orchards, Road Building, Tree Planting, Well Digging.

You will find this book of great value to you in your work. Thousands of men use it as a reference book and would not be without it.

Write today for your copy. Fill out the coupon below *in full* and mail it. "Progressive Cultivation" will reach you promptly.

HERCULES POWDER CO.
CHRONICLE BLDG., SAN FRANCISCO, CAL.
Please send me a free copy of your book, "Progressive Cultivation." I am interested in Dynamite for

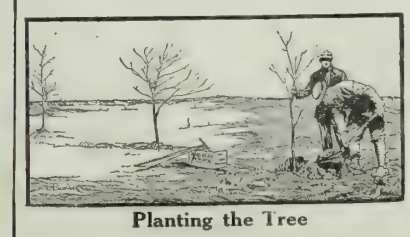
The Best Way to Plant Trees

Those who have once used Hercules Farm Dynamite for the planting of trees never employ any other method. They find that, in the first place, the planting

Blasting the Hole

is done much more quickly and easily than when a spade is used to do all the work. Secondly, and still more important, the benefits to the tree are so great and so valuable that the method which produced them becomes the *only* method to the idea of the experienced.

The difference between the growth and yield of a tree planted in a dynamited



Planting the Tree

hole and one planted in a spade dug hole are almost unbelievable.

During the first year alone the development of the former will be almost twice that of the latter. When the trees begin to bear the yield of the one which has received the benefits of dynamite is much greater than that of the other. Its fruit is larger and of a better flavor.

When you have trees to plant don't fail to use Hercules Farm Dynamite. In "Progressive Cultivation" you are told just how to use dynamite to produce more, and better fruit.

Breaking Rocks with Hercules Dynamite

The illustrations reproduced here show well the efficiency of dynamite when used to break up rocks and boulders preparatory to removal.

Before

The rock in question was blasted by means of a mud-cap. The dynamite stick was laid upon the rock at the point which one would naturally strike if attempting to break it with a hammer. The charge was then covered with a quantity of mud pressed down firmly. In the lower picture the result of the discharge is shown. The entire operation takes but a few minutes, and at the end of it the rock is broken into small pieces easily handled and removed on a stone boat.

After

For large boulders or rocks deeply imbedded in soil the snake-hole or block-hole method of blasting should be used.

In "Progressive Cultivation" these methods are described in detail. Write for this book.

THE Airship escort to the Great Mitchell 7500 Mile World's Record Car as it entered Chicago, October 19th, 1914, completing over 6,000 miles of the run. Chief of Police Gleason has just inspected the seals and found them intact.

The World's Record Long Distance, Daily Run, Mitchell Sealed Bonnet Car Completed Its Long Run in Pittsburgh Friday, October 23rd, 1914

WHEN the stock Mitchell 1915 Light Four Reliability Run Car arrived in Pittsburgh Friday, Oct. 23rd, 1914, Automobile history was made.

A new World's long Distance and Daily Run Record was hung up for a Sealed Bonnet Four Cylinder car.

This beautiful light car had run 7500 miles or 250 miles per day for 30 consecutive days with sealed bonnet or hood. Think of it. Here's a light car—35 horsepower—four cylinder—high speed motor that since September 23rd, 1914 had gone from Chicago, Illinois to Portland, Maine—New York City, N. Y., Washington, D. C., Wheeling, W. Va., Pittsburgh, Pa., St. Louis, Mo., Kansas City, Mo., Omaha, Neb., Minneapolis, Minn., Milwaukee, Wis., Chicago and finally Pittsburgh.

Half the Continent had been circled in 30 days. In all 21 states were traversed. Desperate conditions of roads and weather had been encountered—Rains, Washouts, reconstructed roads—crushed stones—mountain declivities, hub-deep sand and sticky clays. At one stage 65 miles had to be made on low speed and this marvelous engine did it without overheating in the least degree—the radiator was cool.

The progress of this World's Record Car resembled a tour of triumph—everywhere Mitchell enthusiasts—and there are some 35,000 owners of Mitchell Cars scattered over this country—Civic officials and Government officers welcomed its arrival and acclaimed its prodigious achievement. In Chicago an air ship escorted it around town.

When the car arrived in Pittsburgh it was inspected—the seals were found unbroken and the car revealed itself to be in superb condition.

A Stock Car

Now this is just an ordinary "Stock Car"—in no way different from Mitchell Cars on Exhibit in our dealers' Show rooms.

If you owned one you wouldn't give *your* Mitchell as terrific use in five years as this World's Record Car has had in the past 30 days.

Yet if necessary, your Mitchell could stand such use—its capability is there—its the Car that *stands up!*

Get the Personal Touch

Our dealer will be glad to demonstrate any Mitchell Car to you and your family at any time—you can hold the wheel yourself—get the Personal Touch—and you'll be under no obligation to buy.

Please call on him at your earliest convenience—or write us for literature.

1915 Mitchell LIGHT FOUR $1250

Mitchell-Lewis Motor Co.
Racine, Wis. U.S.A.

Osen-McFarland Auto Co.
Distributors
661 Golden Gate Ave., San Francisco
First and St. James St., San Jose

THE MITCHELL LINE FOR 1915

Mitchell Light Four—2 or 5 passengers—4 cylinders—35 h. p.—116 in. wheel base—34x4 tires $1,250

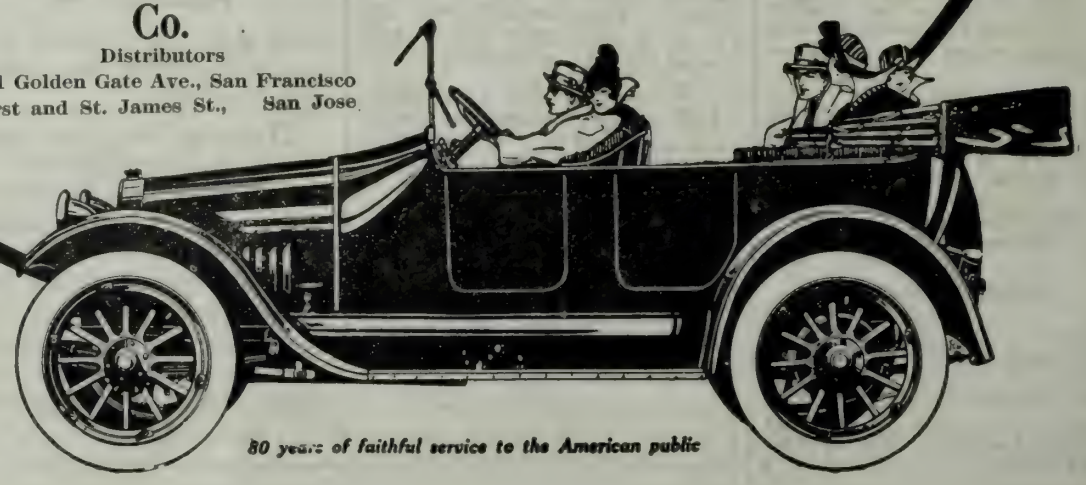
Mitchell Light Four—6 passengers—same as above ... $1,300

Mitchell Special Six—2 or 5 passengers—6 cylinders—50 h. p.—132 in. wheel base—36x4½ tires $1,895

Mitchell Special Six—6 passengers—same above..... $1,995

Mitchell Six De Luxe—7 passengers—6 cylinders—144 in. wheel base—60 horse power—37x5 tires $2,350

F. O. B. Racine



80 years of faithful service to the American public

Vol. LXXXVIII—22 Forty-Fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, November 28, 1914 LOS ANGELES

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Making Drone Citrus Trees Work.

[From Address by A. D. Shamel of U. S. Department of Agriculture at Fruit Growers' Convention.]

From reports of the Citrus Protective League of California and other sources, we find that the average production of 143 select lemon orchards for a period of several years, amounted to 196.2 boxes per acre, while it was estimated that the production of all bearing lemon orchards in California was about 95 boxes per acre. The average production of lemon orchards in Italy and Spain is estimated to be about 300 boxes per acre. In California there are certain lemon orchards, which have produced for the past ten years, an average of more than 400 boxes per acre.

Causes of Low Production.—The variation in production of lemon orchards in California is undoubtedly due to a number of causes, including difference in soil, varieties, methods of planting, cultural treatment, and other factors of production.

Greatest Cause of Low Production.—We believe that the most potent factor, however, is the type within the variety. We find several general types running through all the lemon varieties of California. Each type has similar habits of growth and bears about the same kind of fruit in all of the varieties in which it may be found.

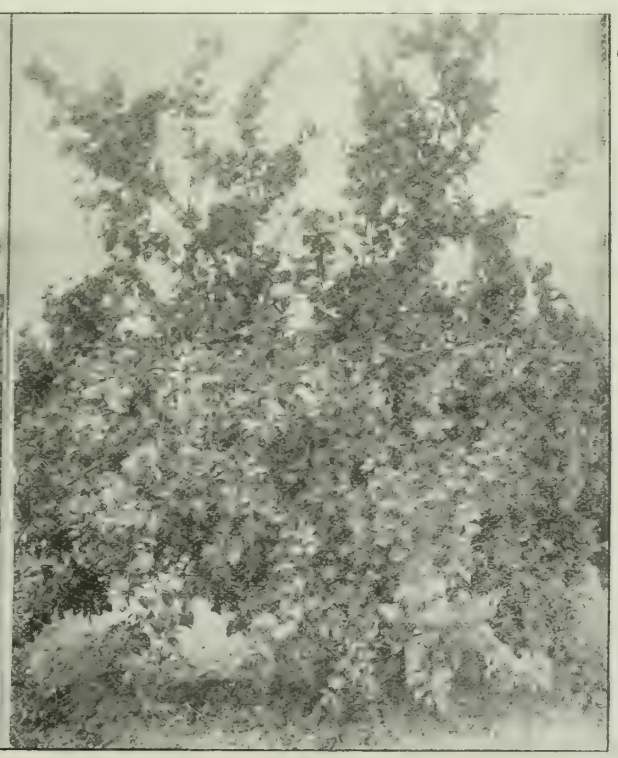
Of the causes of low production of lemons per acre, our investigations have proved that the unproductive types in our lemon varieties are of first and primary importance. From a careful study in all of the lemon districts of the State, we estimate at least 25 per cent unproductive and undesirable types of trees exist in our lemon orchards. In some we have found as high as 90 per cent unproductive types, and in other orchards we have found as low as 10 per cent.

In all cases the maintenance of these undesirable and unproductive trees is as expensive as the maintenance of the productive and desirable types of trees. The presence of the coarse and poor fruits from the unproductive types in the crop, involves additional expense in sorting out the undesirable fruit, much of which would not pay the expense of transportation to markets. Many of these poor, thick-skinned, dry, and bitter fruits are not sorted out, but are packed and shipped to the East; and the reputation of the California lemon is lowered.

Bad Types in Newer Orchards.—It is our opinion, based on careful observation, that there is a larger percentage of the vigorous growing but unproductive types of lemon trees in the newer plantings than in the older orchards. We have actually found, in the last three years, many cases where buds have been cut from these unproductive trees in larger proportion than buds cut from the productive type trees. on account of the fact that buds could be secured more easily from the unproductive than from the productive types, and, in some cases, from the mistaken notion that the vigorous-growing type of tree is the desirable type for propagation.

Bud Variation in Lemon Varieties.—The three leading commercial lemon varieties in California are the Lisbon, Eureka, and Villa-Franca. In all of these varieties we have found more bud variation than has heretofore been supposed to be the case. Bud variation in these varieties is responsible for the origin of the different types which exist in our established orchards.

Type of Growth Correlated With Character of Fruiting.—Our performance record plots have been located with the view to making a careful, accurate, and systematic study of the behavior of these different types of lemon varieties in our established orchards. We have found that the limbs of these trees producing different types of fruit, produce these same fruits consistently year after year. We have not found any orchards in which more or less of this bud variation does not exist. We find in our lemon orchards, trees having very dense, compact, spreading, drooping, erect, or open habits of growth. The time of production of fruits is correlated with the type of the tree, some types producing most of their crop in the autumn, others in the winter and spring, and others during the summer months. The open, productive type of all varieties under observation, produces fruit more or less regularly every month in the year. The amount of production is correlated with the type, the productive types of trees frequently bearing five times the amount of fruit that the unproductive types produce during the year, under co-operative conditions.



Eureka Lemon Tree, Good Only for Shade. **Eureka Lemon Tree, Good Only for Fruit.**
Both Trees in the Illustration are on the Chase Plantation at Corona. The Shade Type Can Be Changed into the Fruit Type.

In our performance record plots, we have found that the commercial quality of the fruit is correlated with production, that is to say, the most valuable commercial fruits are borne by the post productive trees, while the fruits of poorest quality are produced by

(Continued on page 531.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS, ...SAN FRANCISCO

Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., November 24, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka.....	.10	6.97	8.05	62o	42o
Red Bluff..	.00	1.57	4.76	74	36
Sacramento.	.00	1.08	3.03	70	40
S. Francisco	.00	.48	3.42	72	48
San Jose...	.00	.98	2.65	74	32
Fresno.....	.00	.58	1.82	74	38
Indep'nd'nce	.00	.40	1.74	66	26
S. L. Obispo.	.00	.20	3.12	68	38
Los Angeles	.00	.49	1.94	86	52
San Diego..	.00	1.90	1.17	86	50

The Week.

California agricultural fashions change sharply with the season, and the garb of the weather prophet is now seen on all our city streets and rural highways. There is some variation in the cut of this garment, and we note that some wearers are being hobbled too closely to express the normal California confidence and optimism, and others are slit so freely that they expose the lean shanks of pessimism. The proper form is the flowing robe, which admits the free exercise of all functions of prophecy. Such is the envelopment which caparisons our accepted weather-seer, L. E. Blochman, and this is his utterance:

"Not a single rainstorm has as yet passed south of the bay region, where the average to date of other seasons is about three inches; three or four showers happened along, merely the tag ends of northern storms. What is the reason for this? Simply that the storm centers are yet, too far northward—just as they are in summer—to give us rain hereabouts.

"It does not yet imply a dry season, for there are many good seasons in which the rainy season did not set in till December, and not even the first part of December at that.

"As long as there is warm open winter in Alaska we have a dry winter here, a continuation of the summer or rainless period. But it does not imply that these conditions will last; in a month hence the cold wave, which at present hovers over the Greenland and Iceland side of the Arctic circle—as evinced by the severe cold over Northern Europe—may spread westward over our Alaskan Behring Sea latitudes. When it does chill there, and the consequent high barometer area forms, it takes from 5 to 15 days for some storm area to move southward and strike our California coasts, as storm areas of the necessary intensity do not form every day or are not even driven in from the East Pacific. Light showers, as in the past, might stray in, but those would not wet a plow furrow."

Now that we know what the trouble is, we ought to be able to confidently wait. If it gives you any comfort you can believe that the cannonading in northern Europe has caused the atmospheric envelope to slip a little, and Alaska has been deprived of the cold which belongs to her. Alaska weather has in fact struck the planet on the east side of the continent, spreading, according to the Washington report of November 20, "over the South Atlantic States from Virginia to Florida, and has forced temperatures to the lowest recorded in November in forty years." We hope that has not proven true for Florida. At any rate, it is clear that California is getting the light end of the weather-stroke as usual, so why are we worrying?

Relations of Wheat to California Development.

Of course we do not enjoy the shortening of the field-work season which the delay of rain causes, for we may not be able to get in as much wheat as we ought to this year. We ought to be getting back into the wheat-race with Kansas. We read that Kansas farmers are rushing into wheat every acre that possibly can be sown, in expectation of big prices next year. There are no definite figures yet on the acreage, but estimates place it at not less than 12,000,000, as against approximately 9,000,000 acres harvested this year, yielding approximately 186,000,000 bushels. We could give Kansas a close run if we only thought so, without calling back an acre which has lately gone to other uses, but to do that the teams must not be eating their heads off waiting for rain. Therefore, we wish Alaska has frozen up tight long ago, and that our valleys had several inches of water under ground right now.

But, though we may be limited in the area which can be put in early, which is about the only way to put in wheat in California, it is timely to think that more wheat is no fleeting policy, but should come to stay. It is timely to think of the relation which grain-growing should sustain to more intensive cultures. The Oakdale Irrigation District is hitting it up just about right according to our notion. A writer, E. D. Bishop, has collected figures showing 7,639 acres under cultivation for irrigated products. Of crops under irrigation, "alfalfa leads with 4,640 acres, garden crops being next with 1,108 acres, corn and trees and berries climbing toward the thousand mark. There are altogether some 60,000 acres within the district, of which large acreages are still being put in barley and wheat, dry farming, but the big ranches are being cut into smaller tracts for more intensive agricultural development." This is all right: cut it up as fast as you can, but keep on rattling out grain, for the state needs it and values will be high for some time probably. Then some of your cut-up irrigated land may go for wheat also, for water will not hurt it but will make it safe to buy fertilizers and then get twice the wheat from half the land, which old style dry-farming can compass. Wheat has no fight with intensive culture, if you grow it intensively!

The Right Clothes for Farming Women.

But we started out to write a fashion-article this week and have no right to be musing under a straw-stack! We are being so freely consulted by women who wish to go into California farming and by reformers who think other women ought to, that the matter of correct costume is evidently of considerable interest. As Paris is out of the designing line for the season, we shall have to draw upon California models. Mrs. Clara L. Auchmoody of Los Angeles has experience and conviction on the subject, for she says:

"I believe that any person who wears a man's clothes ought to be able to do a man's work. I wear man's clothes while I am working on my 'ranch,' and I do a man's work, too. I'd like to see the man who can excel me!

"I have thirteen acres, a good house, a barn, a cow-shed, other out-buildings, two horses, a cow, a calf, 150 chickens and—a hired man.

"A man who works for me must do what I tell him to do. If he has a suggestion to make I am glad to listen. If it is good, I may adopt it. If I don't like it, he does things in my way."

Here, then, is a rational recipe for a farming woman: make yourself as free as a man, bodily and mentally. And then, as Mrs. Auchmoody says, don't let anybody get ahead of you on your own premises, either in working or boss ing. It is a very simple philosophy, but it is the only one that we are sure will work.

What Another Californian Did in Italy.

We have often told the story of David Lubin's success in persuading the King of Italy to establish an institution which stands the clash of war, as we stated last week. It seems to be a California trait to beat the world in Italy. There is now in San Francisco James Slavin, a native who has gained the right to take moving pictures in the Vatican—a thing which others have failed to secure for years. He says: "It was only after working at the job for years and going back to it after everybody had given it up as a dead proposition that I succeeded in getting permission to take motion pictures of the papal court." It is the Californian's way: their cosmopolitanism is irresistible. And now the good old pope, who is such a prisoner in the Vatican that he can never see again his own birthplace, has about six miles of films and is looking at the world in moving pictures. The pope may catch something of cosmopolitanism himself and will soon be enjoying the Panama-Pacific Exposition—thanks to the staying qualities of a Californian.

Fighting for the Sugar Industry.

There was a meeting of beet-sugar people in this city last week at which delegates were present from Chicago westward through the sugar-making states. A determined effort is to be made to save the beet-sugar interest from tariff-killing in 1916, as the national law now provides. J. Ross Clark of Los Angeles says the interest must expire if the present tariff continues, war or no war. T. G. Palmer, secretary of the manufacturer's association, says "There are now thirteen sugar refineries closed down. In 1913 the output of beet sugar in this country was 733,000 tons, valued at about $60,000,000. The output this year will

show at least a 20 per cent decrease, or a loss of $12,000,000. These figures refer to the beet sugar business alone." The confident claim of the producers is that sugar consumers should understand that free raw sugar will not mean cheaper sugar to them, but that "as soon as business is wiped out in America the old law of supply and demand will enable the foreign refiners to put the price of the imported product higher than it would ever have gone under the protective tariff." That is probably true. It is a part of the unjustified claim that free trade makes lower prices in countries capable of making a home product. We cannot see any reason in proceeding upon such a fallacy, and we hope that when the home-grown sugar people hold a great congress in this city next February, a few days after the Exposition opens, some impression may be made upon Congress. But growers in this state have probably not always secured their proper share of the profit of the sugar-making, and there should be some way to insure that, but the state as a whole, with its exceptional adaptation to sugar production, should not be mulcted by a combination of eastern sugar refiners and tariff-tinkers.

California Christmas Berries.

We hope we shall not be found guilty of a breach of neutrality when we express satisfaction that the California "Christmas berry" is knocking the English holly out of decorative supremacy in this country. It is interesting that the berries and foliage, from parts of the state where the former are bright red and the latter clean of smut, are now going out by parcels post in 15-lb packages in quantities aggregating tons. This is addition to the carload shipments for city sales. If the demand continues, as seems likely, it may be necessary to prohibit gatherings adjacent to highways, or else our wild lands may be stripped of a good part of their joy to autumn ramblers and tourists. The time will probably come when even the roughest lands naturally well set with the plants will have a producing value through the profit in distant shipments. The "toyon," as is its Spanish name with English spelling, is really much superior for large decorations to the English holly, for its berries are brighter-hued and vastly more abundant—though there may be a debate as to the relative beauty of small twigs for Christmas adornment of person or package with joy-tokens.

Rational Help for the Idle.

The appeal for the Belgians, which has met generous response, seems also to have quickened efforts to assist those nearer home. The city of Stockton seems to have done a rational thing by providing a municipal wood yard with a free employment bureau as an adjunct. Food and shelter will be given unemployed men in return for four hours' work a day in the wood yard, thus affording the recipients opportunity to search for permanent employment while making their living expenses.

Green Ladybird.

We commend all of our readers, including G. R., Orland, to our articles on diabrotica, the so-called green ladybird. The last such article appeared in the issue of Nov. 21. G. R. is losing his fall cabbage and cauliflower. He could spray with arsenate of lead, but this would poison him too. The diabroticas may be driven away by a smoky fire to the windward since they are developed to the flying stage. The eggs are laid in the ground, the larvae feed on grass roots and mature into the black dotted green beetles next spring.—H.

Queries and Replies

Querists must give name and address.

Sudan Grass.

To the Editor: Kindly state the feeding value, cultivation and where seed of Sudan grass may be obtained. Has it any objectionable features.—J. F. D., Watsonville, Cal.

Sudan grass seed is likely to be offered by our seedsman, for it is produced in commercial quantities, and it has been so widely praised in our near-farming press that much demand has arisen. Sudan grass is a botanical relative of Johnson grass, with a different root-life and one season, though it has lived through the therefore not likely to be such a pest as the latter. It can only be expected to be good for winter in strictly frostless places in this state. It is of course not a winter grower and can therefore only use the stored soil moisture in this state, for it cannot be safely sown until things are right for planting corn in the locality. It is a coarse plant and not of high-feeding value, being compared with Johnson grass in that particular. One should regard this plant conservatively and make moderate investment for local trial. It will not replace alfalfa where that plant thrives, nor can it take the place of any of our winter-growing forage plants. Its specialty is drouth-resistance during summer growth.

Late Blooming Fruits.

To the Editor: Please give name of a late blooming apricot, one that is a good canner. Apricots grow and bloom finely in this locality, but the late frosts usually burn up the blossoms. Also give name of late-blooming almond.—G. P. C., Lincoln.

The latest blooming apricot we ever saw was growing in La Crescenta, Los Angeles county, and called Englehart, from the name of the propagator. We are not aware that it has been largely propagated. Perhaps some reader in that district can tell us more about it. Of the varieties largely grown commercially we have never observed sufficient difference in bloom to get any of them out of the frost. Drakes and Texas are late blooming almonds.

Second Growth of Corn.

To the Editor: If Eastern corn (the good old Iowa kind) is sown broadcast and cut for fodder when about two feet high, will new shoots start up from the roots the same as Kaffir corn? I have water to irrigate.—Reader, Lincoln.

If the plant is still green and vigorous when two feet high there will be second growth, but not such a free second growth usually as you get from a sorghum like kaffir.

Vetch for Winter Growth.

To the Editor: I have sixty acres which have been used for hay—barley and oats—for a number of years. The land, which is located near Pomona, has been set out to oranges this year and I wish to raise some sort of crop which can be used for fodder, and gotten off by May. I have been told that vetch would be best.—J. W. J., Pomona.

Oregon vetch or hairy vetch would probably give you most crop—either to haul away or plow under. But we should rather not see it there as late as May. We would prefer to get it off or under in March unless you get heavy late rains. Cover crops held late are apt to make your land hateful all summer.

Truth in Grape Cuttings.

To the Editor: Will cuttings taken from Black Morocco come true to the plant from which they must be especially rooted.—C. W. L., Folsom.

It surely will come true. A plant from a cutting is actually the old plant with new roots on it. There is no particular way with the Morocco known to us.

Vetch and Wheat.

To the Editor: I planted four acres to Oregetch mixed with wheat—about two and a half pounds of vetch to one of wheat, and it turns out all right. I would like to thresh it. Will the two ripen together, and when should they be cut? Will the ordinary wheat thresher handle the vetch all right and can it be cut with the common reaper, or does it require special machinery, or attachments if the yield is heavy? Should it be stacked or hauled from the field in the thresher? Of what value is the vetch straw after threshing? Do you think it would pay to thresh or would the fodder cured for hay be more profitable in a locality like this, where hay is high-priced?—M. W., Cool.

With such a preponderance of vetch seed you are not likely to get much wheat—if the vetch suits the situation and makes its customary growth. The two plants can be cut and threshed with the same machinery, by watching and adjusting the concaves if necessary. You will have to cut before the vetch shells out if you care to get that seed. We should cut such a combination for hay, not letting the vetch get too ripe and for cow hay the vetch would increase the value.

Winter-Covering for Alfalfa?

To the Editor: I read somewhere that an alfalfa field is so benefited by one's leaving a light crop standing late in the fall that it was not best to cut the last crop, even if such would be quite profitable for hay. Of course, this would also apply to late pasturing. Is it true? If so, why?—G. W. R., Fresno.

This is an interesting point to compare experience upon. Theoretically it might be an advantage to leave a cover to limit frost effects and perhaps, on a thin stand, to save some volunteer seedlings which might start with moisture preceding frost. But what is the practice of growers as a result of their experience and observation? One may conclude that the dormant root is frost-proof, else alfalfa growing would not be possible at the east, but is there any consideration which would indicate that the practice mentioned by by our correspondent serves any good purpose in California where, presumably, the root is always less dormant?

Rabbit Killers.

To the Editor: Is there any way to protect beans from rabbits by placing poison on the outside of the rows?—Subscriber, Merced.

You can sometimes get a rabbit by pricking strychnine into a piece of apple or pear and putting it up about a foot from the ground on a thin stick to make the rabbit think he is pulling it off a tree, probably. But for rabbits generally the best things we know of are greyhounds and guns on a small scale and rabbit drives as large neighborhood enterprises.

Central Tank for Frost Fighting.

[Written for PACIFIC RURAL PRESS. By J. E. Adamson, Pomona.]

The citrus growers are facing the season of the year when the problem of orchard heating against frost is the most important one.

So far, weather conditions are almost ideal. There is plenty of fog, and practically no weather so dry as to preclude heavy morning dews. Storm centers can pass without an abnormal drop in the morning temperatures. In this regard this year is much better than last, for the same period, and last year turned out fine from the standpoint of the frost fighter.

There is just one element of danger in all this. The seeming security of such weather probabilities is liable to lull the growers into a state of partial carelessness which will leave them unprepared for some cold snap coming suddenly during Dec. or Jan. Heaters should be looked over and placed in the orchard full of fuel, and a reasonably good supply on hand as a reserve.

Very little of importance has come to light in the way of new things in orchard heaters. Some effort has been made to give better combustion by increasing the height of the stacks and the introduction of air at the bottom in quantity sufficient to produce perfect combustion, when everything works just right.

There is, of course, nothing new in this, as it is as old as the knowledge of combustion. There are some rather ingenious methods of covering these holes to keep out the water, ranging from the forming of little sheds over the holes by the expansion of the metal just above the hole, to the production of a collapsible stack which will go completely under cover when not in use.

Pipes From Central Tank.—The frost fighting people at Pomona, have brought out some points of improvement in the handling and operation of heaters which will be further tried this year in the hope of producing a more permanent and reliable heater. This is in the nature of a distinct change in methods, by replacing the present form of heaters which contain the oil supply in the heater where it is subject to the changes due to the heating effect of the fire, with a heater which has its oil in a central tank feeding regulated quantities to the stoves proper through pipes. The regulation has been made possible by means of a single valve of special form which is at once cheap and good. Once the flow is regulated to suit the varying levels of the orchard, the control is all by one main valve in each line. The design of the system is such that the lines of pipe are empty at all times when not in use, thus eliminating any danger of damage from small leaks in the line. The burner proper can take almost the form of a stove that will burn the oil to advantage. Old heaters can be used as long as they last, which will be much longer than if they were required to hold oil; as small holes will do no harm when the oil is fed only as used. The type which seems to give the best results as to combustion is a form that has been used largely for the burning of oil in house heaters and ranges. The oil is fed in a small stream through the top of the stove by means of a short tube which carries the air supply to the fire. The fire itself is confined to the body of the stove, which is usually red hot, the stack carries just enough heat to produce the draft, and does not get red unless the fire is pushed to extremes.

This holds the combustion close to the ground, a condition much to be desired. This system offers the only means of securing at once good combustion and good control, and gives an opportunity for the development of the burner proper without the vexations of the oil pot and its troubles.

When the orchards are under the control of many growers, the question of organization is almost as important as the question of heaters. The Pomona organization will be more complete than ever this year, as it is the policy to learn from experience of the past and make improvements which will tend to make the service more perfect.

The old heaters should be got out in time and looked over to be sure they are in good condition, giving special attention to the bottoms as there is considerable tendency to rust small pits where the moisture gathers in drops on the metal next to the ground.

One grower told the writer that he found quite a large number of his heaters with pin-holes in the bottoms. He had gone to some trouble to paint the heaters, but had not cleaned the bottoms before painting them and rust had continued to form under the paint.

The plan we used in the summer care of our heaters was to paint them with heavy crude oil, setting the heater in the oil while the painting was in progress. This left the heater in the oil long enough to insure the oil soaking in as far as the surface of the metal. The heater was then set under the tree, using a paper as a protection from the moisture of the earth, and to retain any surplus oil that might drain from the surface of the metal.

Old newspapers were used for this work, taking the sheets just as they come folded, thus having five or six sheets of paper between the heater and the earth. The weight of the heater caused the paper to form a sort of bowl into which the oil flowed and left the heater to stand in a bath of oil all summer.

These papers can be left under the heaters as long as they are set out in the rows for the winter campaign, and will offer good protection to the bottoms for the period preceding any firing which may be done.

It is not to be expected that the papers will last through the heat of firing, but they are not expensive, and new papers will most likely be needed next spring.

All the other little details of the campaign need to be looked after so that nothing be left for the busy time when the temperature shows a tendency to go down. See that the torches are in good order and a supply of torch fuel on hand that has enough life to it to start the fire. Light gravity oil such as is used in these torches will lose its life by keeping, unless it is very securely sealed.

If it is found that the torches do not light well, the addition of 5 to 10 per cent of gasoline will bring the flash point to that needed for quick work.

Thermometers should be looked after and if we are not sure they are in good order test them for freezing point by placing them in water filled with fine crushed ice without salt. This will show the true freezing point and if the mercury does not stand at 32 on the thermometer scale the variation should be noted as a correction on the thermometer.

CLEANING AND PAINTING FIRE POTS.

[Written for PACIFIC RURAL PRESS by William B. Parker, Ventura.]

The methods of cleaning and painting the fire pots described in this article are taken from observations made on the Limoneira Ranch at Santa Paula, where the work was done this year in Sept. and Oct. It should be done any time the fire pots show the need of it; and since none of them are put out of commission during the application, it can be done at any time of the year.

Cost.—The cost of cleaning and dipping the fire pots will vary with their condition. With fairly good pots containing a light oil which drains out quickly, two men can with the equipment described below, clean, dip, and set out 170 to 180 pots per day. The cost is estimated at $3.00 to $6.00 per acre of 100 fire pots.

Apparatus.—The apparatus used for this work is placed on a low orchard wagon and arranged as follows: A barrel of asphalt paint on the front end. This can be obtained from the association or elsewhere. A hoe, or stick with a cross bar on the end, is used to stir the paint thoroughly before removing it from the barrel. (If not stirred before removing from the barrel, and occasionally in dipping it out, the pots will be unevenly painted.) Behind the barrel of paint is a drain board, consisting of a rack to hold three or four pots, a pan beneath to catch the drips, and a spout leading to a can hung beneath the wagon to catch the paint that drains off, and from which the paint is turned back into the dipping vat.

Behind the drain board is the dipping vat, composed of half a barrel. This vat is kept conveniently full of paint, which should be occasionally stirred to prevent settling. The cleaning rack, placed behind the dipping vat, consists of a block with a concave upper surface, and a horseshoe shaped rod with long ends to take the place of the rear caulks of a horseshoe so that the ends are stuck into the platform and thus hold the curved part of the rod horizontal and high enough to fit into the pot when it lies on its side on the concave block. The curve of the rod is such that it must be squeezed together slightly to get inside the pots. This holds them in place while cleaning.

Operation.—Two men work together using two cleaning racks. The fire pots are standing each one beside a tree in the orchard, and all full of oil. An empty pot is set on the ground beside the full one which is to be painted. A funnel standing on three iron straps to keep it out of the oil, is set into the empty pot to hold the full one while it drains so that it may be painted. The emptied pot is now laid on the concave block and held with the bent rod. All of the dirt and rust are thoroughly scraped and brushed from the outside of the pot with steel wire brushes; and a scraper made by bending an inch of the end of a file, to a right angle and sharpening it. The pot is rotated as it is cleaned. A small rust spot if left, will eat through the pot even though well covered with paint.

The cleaned pot is then set into the dipping tub and rotated to get good contact of paint with the outer surface of the pot. There is no need of painting the inside. When thoroughly dipped, it is set on the draining board. When reasonably well drained, several thicknesses of newspaper are stuck to the bottom and the pot is set on the ground beside the next one to be emptied and painted. The fiber of the paper adds to the protection afforded the bottom of of the pot by the paint.

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Control of Citrus Canker.

[Written for the PACIFIC RURAL PRESS by Thos. H. Means, San Francisco.]

Citrus canker is a fungus disease which attacks leaves, young wood, fruit, and probably old wood of the trees. It seems to be more common on grape-fruit, and citrus trifoliata, but has been found on all species of citrus grown commercially.

It is only within the last two or three years that it has been recognized as different from other diseases found on citrus trees in the Gulf States; and it is only within the last year that it has been regarded as dangerous. It may be of interest to California orange growers to know something of the fight which has been carried on in Texas, Louisiana, Alabama and Florida, even though the disease has not yet appeared in California, and may never do so.

It seems to be particularly disastrous to citrus trifoliata, one of the common stocks used for budding in the Gulf Coast district, [but not in Cal.—Ed.] and, no doubt, was introduced into this country on trifoliata from Japan.

The disease has been studied in the laboratory by Stevens of the Florida Experiment Station at Gainesville, by Wolff of the Alabama Experiment Station at Auburn, and by Edgerton and Tucker of the Louisiana Experiment Station at Baton Rouge. These laboratory studies have shown the disease to be produced by a fungus which spreads through spores easily carried by wind currents, and may be carried by insects from tree to tree, by birds, by workmen or teams in the orchard, in fact, in many ways. The disease seems to be very easy to transmit and difficult to control once it has secured a foot-hold on a tree.

Dr. E. W. Berger, State Nursery Inspector of Florida, first recognized the danger of the disease. Nursery inspection in the Gulf States has been carried on for a number of years, but has never been as thorough as in California, largely because the funds provided for this inspection were very inadequate. The disease had been seen, but passed over as unimportant. During the fall of 1912 Dr. Berger found it in Florida, Texas, Louisiana, Alabama and Mississippi. In both of the cases in Florida the disease seems to have been introduced on trifoliata stock which had been brought from outside the state. A rigid quarantine was immediately established against Florida nurseries known to have the disease and against all outside sources of citrus stock by Dr. Berger, because no attempts were being made in other states to control or eradicate the infection. In fact in Texas, Louisiana, Alabama and Mississippi, trees heavily infected with canker were being sold under nursery inspection tags. Dr. Berger's investigations and published statements thoroughly aroused the country to the need of some action. Spraying with Bordeaux mixture, the burning of infected parts and the painting of the stumps with a heavy Bordeaux mixture were recommended, but this treatment seemed to have little effect upon the disease, for new shoots coming out from the stumps were infected as though nothing had been done. The inspectors then recommended the destruction by fire of all plants infected, particularly nursery stock. This method of eradication has been followed in Dade county, and near Monticello, Fla.

The Florida papers have given much attention to the matter and have insisted upon the prompt eradication of the disease and that no methods were too drastic at this time. A fund for inspection was collected by popular subscription, as the state had no money available. A corps of inspectors was immediately organized and put to work, and as a result some 70 orchards and a number of nurseries in Dade county were found infected. Realizing the infectious nature of the disease and the small area troubled, absolute destruction of all diseased plants was recommended by Dr. Berger, who advised burning the trees with oil spray and charring the ground and vegetation within a few feet of the tree.

The writer made a visit to Dade county during September, while the work was going on, and the method of inspection and burning in operation. Ten or fifteen year-old grapefruit trees were destroyed as promptly as nursery stock, and no attempts were made to conceal or hide the disease, or to try to cure it once it was discovered. The people of Florida deserve great credit for the methods adopted in this campaign, and although the loss may have been heavy on certain individuals, it was nothing compared to what might have resulted to a great many growers had the disease been allowed to spread.

There are, in Dade county, Florida, approximately 800,000 citrus trees, mostly grape-fruit, and at the time visited, there had been a few less than 2,000 orchard trees burned. Several thousand nursery trees had been destroyed. The orchards were inspected regularly, the attempt being made to return to each orchard where infection had been discovered, at least once a week; and following each inspection infected trees were destroyed. From last reports the infection had been nearly stamped out, and it is thought that there will be no return of the disease.

The writer was interested in this work because he has had charge of the development of a large citrus planting in southern Louisiana. Trees infected with canker have been found in a number of nurseries and groves in this state, and it was hoped the spread of the trouble could be prevented. The Louisiana growers, like those in Florida, vigorously and promptly destroyed all diseased trees and from present indications the disease is under control. Alabama has placed a quarantine against infected trees, and Louisiana has placed a quarantine against all citrus trees grown outside the state.

Now that the disease has become known it should be the policy of the state officials interested in the development of citrus business in the South to establish quarantine against diseased stock, and not against all stock. For example, in nearly every county in Texas, Louisiana, Alabama, and Mississippi infections of canker have been discovered; and

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through the state officials, inspection is being made and infected trees destroyed. State line quarantine will greatly cripple the industry for the reason that some of the most reliable nurserymen will be prevented from shipping trees. It is certainly to the interest of the states that quarantine be established on broader than state lines.

Since citrus canker is a disease distributed through trifoliata stock and found largely on grape-fruit, it is not likely to occur in California, particularly in view of our rigid quarantine regulations, but it is highly desirable that particular attention be given to importations from Japan, where the disease is, no doubt, prevalent, and that trifoliata stock and seed be watched. The disease is known to have spread through infected seeds.

Although the excitement in certain parts of the South has been intense the writer believes that the disease is not as dangerous as has been thought, nor is it going to be as difficult to control or eradicate as has been generally supposed. Within a few years a fight with citrus canker may become an everyday business of the citrus grower, and an outbreak of the disease regarded by him as no more serious than the scab at this time. Methods of certain control have not yet been proven, but experimental work on these lines is being carried out.

Future Lemons in California.

(Address by C. C. Teague of Limonsira Co., at Fruit Growers' Convention, Los Angeles.)

In attempting to forecast the future of any business it is first necessary to be in possession of all of the present facts surrounding that business. Let us then, for a moment, consider the facts and statistics of the lemon business. According to the Citrus Protective League, the most authoritative source of information concerning citrus fruit in the world, there were, in California, not including the plantings of the spring of 1914, 32,000 acres of lemon trees of all ages. According to the same source of information, the bearing lemon groves of the State are producing annually an average of two hundred packed boxes of lemons per acre. It is safe to assume that with the experience of the past teaching, better methods, better stocks, better knowledge of how and where to plant, the non-bearing lemon acreage will produce as much per acre as the lemons now in bearing. It will then be seen that with this 32,000 acres all in bearing, California will produce 6,400,000 boxes of lemons, or about 16,000 car loads, which is about 4,000 car loads more than the entire present consumption of the United States. The present consumption of lemons in the United States is eleven to twelve thousand car loads annually, six to seven thousand of which are produced in California; the balance are imported from the Sicilian Islands. The increase of consumption of lemons in the United States in the past eight years was about twenty-eight per cent. Assuming that the ratio of increase in consumption will be as great in the future as it has been in the past, the United States will consume all of the lemons that the acreage now planted will produce by the time that acreage is in bearing, provided the Sicilian lemons are eliminated. Sicilian lemons will not be eliminated without a fight, as the United States consumes about twenty-five per cent of all lemons exported from Sicily, and is considered by the Sicilians as their best market. They are operating under cheap labor conditions and a reduced tariff, which means that before they can be eliminated California will have to produce superior lemons and sell them cheap.

Profits Increased.—While, as has been shown, the average production from the bearing lemon groves of the State is two hundred packed boxes per acre, some growers are averaging 425 to 450 packed boxes per acre. Some of the shippers in the California Fruit Growers' Exchange, which ships about seventy-five per cent of all the lemons produced in the State have been beating the general average of the Exchange prices for a number of years past, 50 to 75 cents per box. Four hundred boxes per acre multiplied by a premium of 50 cents per box, makes a profit of $200 per acre; in other words, the shippers who are securing this premium will be making $200 net profit per acre when the average shipper who is producing the same quantity of fruit per acre is only paying expenses. It can readily be seen where the grower who is producing only the average of the State and is getting less than an average price for it, will get off under severe competitive conditions.

Under the competitive conditions which are before us it will be a survival of the fittest, and, Mr. Lemon Grower, you had better make up your mind that if you are to remain in the game you must produce more than two hundred boxes of lemons per acre, and you must so grow and handle, pack and sell them, as to return you at least the average price.

How may this be done?

Vigorous Trees.—First, the good keeping quality of the fruit is probably the most important thing in the lemon business, and quantity of fruit next in importance. No one can survive in the business under severe competitive conditions who cannot produce fruit that will ship to Eastern and Middle West markets and arrive comparatively sound and keep for a reasonable time after it gets there; and I might add, who can not produce more than two hundred packed boxes per acre.

To produce lemons of good keeping quality and in good quantity, you must begin in the grove, as the trees must be kept in good, healthy, vigorous condition so that it will bring as large a proportion of its fruits up to the most desirable sizes (300s and 360s) green as possible —ripe fruit is of inferior keeping quality. Naturally, cultural practices have considerable influence on the quality and quantity of fruit. Proper irrigation, cultivation, and fertilization affect directly the feeding of the tree and its ability to produce good fruits in abundance. Consequently these things must be carefully studied, applying those methods and materials best suited

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to the climate and soil conditions where the grove is located. If you are just planting, plant trees budded from parent trees of known performance. This has been proved by the work of Mr. Shamel, of the U. S. Department of Agriculture, as of great importance. Other things which also have their influences on quality and quantity of fruit, are:

(1) Proper control of insect pests, including fumigation and spraying.

(2) Pruning: Proper training of trees to support the burden of the fruit, and renewing of wood in the trees as they grow older is important.

(3) Special individual tree care: Gum disease treatment, and as the trees grow older, special attention to individual trees as they may require it.

(4) Frost protection: The experience of January, 1913, should have taught the lesson that it is not safe to attempt to grow lemons without adequate frost fighting equipment and a knowledge of how to handle it. Many of our growers apparently have not yet learned the lesson, and judging by the lack of proper care of oil pots and equipment, others are fast forgetting it.

(5) Careful handling: Up to this point a few suggestions have been made concerning the growing of lemons, but probably more failures are made after the fruit is grown than in the growing. Improper picking and handling are two of the most common causes of failure.

Lemons should be cut from the trees as nearly as possible at intervals of not over four or five weeks; as longer intervals result in oversize of fruit, a considerable portion of which will have to be discounted 50 to 75 cents per box; also overmaturity which is still more serious, as it injures its keeping quality.

The clippers used in picking should be carefully examined each day to see that they are in proper condition to make smooth cuts, a good practice is to have enough clippers so that a complete change can be made each day. Gloves should be worn by the pickers and these gloves changed before the fingers are worn through to prevent the nails of the pickers injuring the fruit. Some of the boxes picked by each picker should be carefully inspected each day for clipper cuts, long stems, small sizes, and lemons pulled without cutting. A record should be kept of the quality and quantity of the work done, and those pickers that do not come up to a high standard dispensed with. During this picking process, as with all others connected with the lemon business, the fruits must be handled as carefully as if they were eggs. Care must be taken not to fill the boxes too full and the fruit should always be hauled to the packing house on wagons with good springs. If the fruit is shipped through an association, the picking should be done under the direct control of the association and in such a manner and at such times as it directs. Taking the picking out of the hands of the grower thus accomplishes uniform picking under one manager.

Grading and Curing.—After delivery to the packing house the fruit should be washed and graded for color—green, light green, and ripes—each lot being kept separate during the curing process, as these respective grades become ready for shipment at different times and are of different keeping quality. During the curing process the fruit must be watched carefully, as the relation of the temperature and humidity are important and the fruit must be kept free from moisture and also prevented from wilting. If the fruit is kept under a condition which is too humid it tends to turn a reddish color, lose the stems and injure its keeping quality. If given too much air, the fruit will begin to wilt and therefore become unmerchantable. After curing, the fruit should be carefully graded as to quality—extra choice and choice—the green and light green packed under the best brands, which go to the most discriminating markets, and the ripes being of poorer keeping quality, packed under separate brands for markets not so particular. Sizing and packing must be carefully done, and the fruit is now ready for the market.

Regular Customers.—It should be the aim of every packer to build up a regular line of wholesale customers for nearly all his output, who will look to him for their supply regularly, and who will anticipate their wants and file future shipment orders, and who will take the cars on arrival at the highest market price. This can only be done by supplying them with fruit upon which they can absolutely depend, fruit of good keeping quality, well graded, and well packed. It can not be done by supplying them a good car of fruit this week and a poor one next, and it can not be done by refusing to supply them when the market is low and being willing to supply them when the market is high. The packer that conducts his business on a speculative plan, which means that he has no regular line of customers, but stores his fruit through the low periods hoping for higher prices later, and ships his cars tramp, will find it difficult to stay in the business through the competitive years that are just ahead, while we are driving foreign lemons out of our markets. There are some ship-

(Continued on page 530.)

Roeding

TRUE TREES YIELD PROFITABLE CROPS

As it would be foolish to expect to gather figs from thistles, so is it impossible to get fancy fruit from inferior trees. You know that it is the extra fancy fruit that brings the grower his largest profits and so it should be the aim of every planter to make his trees produce the largest, choicest, best looking fruit.

To do this requires a good start.

For over 30 years we have been growing nursery stock in this state. Our nurseries comprise over 2000 acres and are located in the spots most favored by climate and soil for the propagation of perfect stock. We have been constantly on the watch for new methods and new varieties. We have been searching this country and Europe for anything and everything that would help the fruit interests of this great state. We have been always in the foreground—always working and fighting for cleaner, better, truer nursery stock.
Today we offer you the benefit of our large organization and many years' experience.

TREES

We have the finest and most complete stock of

FRUIT AND ORNAMENTAL

trees, vines, shrubs and plants that it has ever been our good fortune to offer. We can fill your orders complete, no matter how small or how large—and we believe this is the ONLY nursery on the Pacific Coast that CAN fill your orders complete.

SEND US YOUR LIST FOR PRICES AND SUGGESTIONS

We will be glad to advise with you without any obligation on your part as to what is most suited to your soil and climate. Being in close touch with markets, we will also be glad to advise with you as to what will probably be the most profitable varieties for you to plant this coming season. Send us your list for prices. Get in touch with us today. We can advise with you much more fully now than if you wait until our busy season commences

Fancher Creek Nurseries

Paid up Capital $200,000

Geo. C. Roeding, Pres. and Mgr. BOX 18, FRESNO, CAL.

Thank You, Mr. Peach King!

[Written for the PACIFIC RURAL PRESS.]

Mr. J. H. Hale of the Eastern horticultural world, we have enjoyed your rollicking meteroic career the length of our State, and we thank you for putting us on our guard. You tell us that we are not the only peach in the American box, and not the only apple tree in the American orchard. You give us credit for inspiring your eastern world to extend your

J. H. Hale and His Early Peach.

peach season backwards from August and September to May. You tell us that our transportation adversities are the blessings that taught us the art of packing peaches so they would sell, and in blessing us with that art, blessed you, for you were quick to learn.

Creating Markets Out of Season.—You show to us that people will eat fruit out of season, for you thus describe the process of teaching them:

"I talked about my plans to the produce men, the fruit men, the wholesale men, the retail men, about planting large orchards full of early peaches. They all said that the trade just used a few California peaches, that they wouldn't eat peaches in July; that there was only one time when they wanted them and that was during the latter part of August and in September. They further said there was no market for peaches in June and July in any considerable quantity. But a few visionaries went ahead and began planting. Others planted farther up the coast, and still others planted, and from that has grown up a business which ships as much as 30,000, 40,000 or 50,000 carloads of peaches in a single year, sold in May, June, and July. Fruit dealers, wholesalers, and retailers will tell you now that the summer months are the best months."

We have been afraid that our perennial fruit producing climate might be of no advantage, for we have been repeatedly told that people won't eat fruit out of season. So we may with confidence look forward to the education of your people to eat our fruits "in season and out of season." That is what we desire, for you tell us that the East is over-planting and that "later on" these orchards back there may be bought "pretty cheap."

We Too Have Apple Quality.—We have no desire to buy them at that price, for we love our sunny California as you say one must love his orchards, if he hopes to make them say "Thank you" and produce apples which will sell at "nearly double the price" of our California navels. You do not seem to know that we can produce the same kind of apples. Our Prof. Cook, at whose invitation you came to our fruit land, is a sort of a crank on the quality of apples we are just beginning to raise in our higher mountain valleys.

Some Achievements of Yours.—You had a hand in establishing in Connecticut the first Agricultural Experiment Station in America, you had the vision of a peach orchard extending from Maine to the Gulf and from the Atlantic to the Pacific and had the courage to plant 2,000 peach trees in Conn. far north out of the peach belt, where your people and your friends thought you were crazy to invest the savings of your young manhood and your mother's widowhood—you pioneered in the business of spraying for disease and you overdid it so the leaves forsook their fruit and then you broke traditions by applying nitrate so that new leaves came and matured the crop. You originated an early peach that is grown widely commercially in our State, and it was named after yourself. We thank you for your peach as you thanked us for our packing.

We Must Please the Consumer.—Knowing your success in growing that variety and others in Connecticut and Georgia, we gladly accept many of the hints you dropped while with us. Here is one that we are prone to forget: "One thing you must remember is that the consumer in the east is the final judge, and he is the man that is to furnish the money and to pay the bill. You can catch his eye and you can open his pocket book with beautiful fruit and attractive fruit and attractively put up fruit, but in the long run you must give him quality. You must give quality. There is a greater and greater demand for fruit of higher quality. You must study the question of quality. You have been planting wild just the same as in the east and there is going to be an enormous production of inferior grades of fruit, because they have a tougher skin or will handle well in some way, but the average consumer wants quality and in the long run will pay for it."

Alfalfa Seed

It pays to be particular when you are purchasing. All the stock we offer for sale has been grown on fields personally inspected by us before they were harvested. We do not grow, nor do we deal in any other kind of seed. Our whole time and attention is devoted to the Alfalfa Seed game.

We can, and do, offer California's best product.

Samples, Prices and any information you may desire will be furnished on request.

V. A. PETERSON ALFALFA SEED CO., Arbuckle, Calif.

The only exclusive Alfalfa Seed dealers in the West.

FINEST
NURSERY STOCK
IN CALIFORNIA

20,000 Valencias, 20,000 Washington navels, 20,000 Eureka lemons, 2,000 seedless grapefruit. All selected buds on sour stock, grown on famous Lemon Heights—Tustin. Finest lot of thrifty, clean trees in California. Must be seen to be appreciated. Write for prices, or telephone for appointment to see trees, to

TUSTIN PACKING CO.

TUSTIN CALIFORNIA

FREE Book on RHUBARB Culture
WRITE FOR IT TODAY —

Now Is the Best Time to Plant
RHUBARB
BERRIES AND SMALL FRUIT.
If planted now, you should derive good results
J. B. WAGNER-Pasadena, Cal.
The Rhubarb-Berry & Cactus Specialist.

Clingstone Peach Trees

TREES TRUE TO NAME · PLACER NURSERIES · The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF.

TUSCAN! Ours are the improved Round Tuscans—firmer, more symmetrical and uniform, Finer Grained, less subject to Wind-Fall and Split-pit, and preferred (to the extent of $2 to $5 more a ton) by canners to the oblong Tuscans commonly propagated.

PHILLIPS! We cut our buds from a block of trees that have proven an exceptionally good strain of this variety. Peach trees are always a safe investment—the demand is large, the price firm, and the profit good. What more can you ask?

THE SILVA-BERGTHOLDT CO., "Fruit Tree Specialists," P. O. Box B Newcastle, Cal.

TREES TRUE TO NAME · PLACER NURSERIES · The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF.

The Tree Says Thank You.—We haven't so many centenarians among our apple trees as you have "all over the East," trees which had defied the insects and fungi of destruction and produced cider a century before they "went to the University." But we are interested in what you say of changing their fruit from the cider kind to the gold nugget kind mentioned in preceding paragraph.

"These trees lived and grew in spite of diseases and fungus troubles, etc., until the scientist came along to show how he could polish them up. This apple comes from an educated Baldwin tree. It was one hundred years old before it went to the University and it was one hundred years old before it ever heard of an experiment station. It was a hundred years old before it had a farmer acquainted with it or in friendly relations with it and willing to take it in hand and tell it he loved it and wanted to make it smile and be happy, and willing to stroke it down the back as you would a kitten or a pretty woman. These came from an old neglected tree. It was pruned. All the dead wood was cut away, the old bark was scraped and the whole tree was sprayed. The land was broken up around. It was fed with with stable manure and chemicals; then more spraying and more feeding; and in two or three years it said "Thank you," and began to produce fruit like this. And we have old apple trees in the east that are giving twenty, thirty, forty, fifty bushels of apples per tree. Eighty is the way you California people talk, and it is true, in spots."

Are Winners Unreliable?—You advise us not to go to the winners in the fruit game to get the facts, yet you who are so successful in the fruit game almost curdle our blood with "overplanting" and "overproduction" pessimism. Shall we follow your advice and ignore the alarming pessimism expressed by yourself, a winner at the game? Had we not better partially accept your statement of our case in these words:

"When I was here twenty years ago you were talking about 10,000 carloads of oranges. You ran it up to 50,000, and now you are talking about 75,000 and eventually 100,000. The people of the United States will eat them, but whether they can pay you a price that will warrant the values you put upon your lands—fictitious values, of course—I do not know.

"Somebody said to me up in the Santa Clara Valley. 'Surely you will admit that land is worth twice what one crop will bring, won't you?' No, not at all. We can go down into New England anywhere and show you crops that will sell for twenty times what the land will sell for any time."

You do not tell us why that land is so cheap. It seems like it would be worth investment if it would yield such interest, and we want to know why your eastern capitalists do not raise fruit on the side.

We have seen the tremendous increase in the orange crop taken care of, we have seen our deciduous shipments increase by hundreds or thousands of carloads, and we have faith to believe that what we need to do is to extend our fruit seasons where they are not already twelve months long every year, and improve the grading and packing which you have found so valuable. We have demonstrated our marketing ability in many horticultural lines, competing with you successfully under the handicap of transcontinental freights.

Loving the Game.—We like the point you make about loving the game and being willing to play it through.

"But there have been too many non-horticulturists. Too many people have gone into the peach business in the East just like they went into the orange business here; people who were not horticulturists, who were not lovers of fruit for its own sake. I will venture to say here that those who succeed in horticulture are those who love the trees and plants which they cultivate for their own sake, and for the beauty of the fruit produced. Such people prefer to grow the finest of fruit, being satisfied if they realize only what it costs them to raise it, rather than to get rich on an inferior grade.

"Hundreds of people went into the peach business. Hundreds went into it for the sake of money making, just as they would start a saloon, for profit; but peaches looked better. Millions upon millions of peach orchards planted east of the Mississippi have been abandoned within the past 15 years. Cotton planters of Georgia, bankers, merchants, lawyers, even preachers, went into it, supposing that by owning some land and planting a few peach trees they could live happily ever afterward. At one time there were in Georgia something over 18,000,000 peach trees. Today there are less than eight millions, yet those 8,000,00 are producing more high grade marketable peaches than did the 18,000,000."

This shows the line that must be followed by all fruit growers—we must make the 8,000,000 trees produce more high grade marketable fruit than have the 18,000.000.

Useful, if Not Wealthy.—And even though our hopes of amassing great fortunes from fruit growing should fail, we like the prospect of wide usefulness which you extend in thus describing some of your large eastern orchards:

"We have a large number of growers in our states and in all the sections who are making very great successes so far as the quantity of fruit they produce, the beauty of it, the quality of it and the way they put it upon the market are concerned, but only a very small number of them are amassing any great fortunes. They are doing a large business. They are giving emloyment to hundreds of men and women. They are giving employment to manufacturers of fruit packages and to transportation companies and to wholesalers and retailers and are suplying the world with an ever increasing supply of wholesome food, but it is not the quick rich business that you hear about. You hear about those men when they sell crops of enormous value, as you do of your larger growers over here, but somehow the bookkeeping doesn't show up, and we do not see the other side of the ledger; yet I know a good many men in all these territories who are really making a success of the production and a very great financial success for themselves, probably to a larger degree for the capital invested, than in any other section of America."

Cheap Labor.—You claim the advantage of cheap labor in these words:

"Then, we have cheap labor in the south Atlantic States or in the middle Mississippi Valley. We are blest with the negro laborer, one of the best laborers on the face of the globe if you handle him right. He is kindly, faithful, earnest, honest; lives cheaply and doesn't want to live any too well; has not any serious ambitions to get more; has always worked for low wages and is satisfied too, so that we are blest with a cheap labor there that works from sun to sun at a price ranging—it used to be after the war 40 to 50 cents a day, and it gradually crept up to 50 or 70 cents and now ranges anywhere from 30 cents to $1.00 a day from sunrise to sunset. You do not get any such amount of work as that—from sunrise to sunset.

"Another advantage is that further north we are near the great ports that bring in the army of fresh, new blooded laborers from the new countries of the world. They are untrained and unskilled, many of them, and many of them are trained and skilled in certain lines, but they want work and they want it right away just as soon as they land. They don't stay idle fifteen minutes, and they can be hired at a moderate rate of wages, so that our average rate of wages is scarcely up to a dollar and a half a day for a ten-hour day, and there is an abundance of labor. If you are anywhere near the coast and run short of labor you can call up one of those agencies and they can send out ten to fifty or five hundred men on twenty-four hours' notice and you can keep them on the job."

We have heard so many of your countrymen of the South bemoan the incompetence of the negro laborer as we bemoan that or our cheap labor, that while you, Mr. Hale, get satisfactory returns from it we do not envy you the problem it makes. We have found our cheapest labor most expensive; though you have had the advantage in the great influx of industrious foreigners who sooner or later amalgamate. We too, expect immigration of that sort via Panama canal unless Europe be too much depopulated by the war.

Cheap Land.—Of cheap fruit land we have none because we know its value before it is planted—neither do we have the cold winters and the wet summers. Our lack of summer rain gives us unequaled advantage in drying fruit and raisins. This same dry summer makes us immune to certain of the comprehensive tree pests and disease you claim for the East.

Optimism.—But whatever troubles may come we shall be glad to look at the world in the spirit you express in your closing words:

"Adversities are the blessings of the fruit industry. They strengthen the character and develop the fight in the grower. If it were not for these serious obstacles every man with a little money and less experience would be growing fruit. The energetic man would have no advantage whatever over the slothful. The blessings of adversity were never so strongly apparent as they are today in horticulture.

ESTABLISHED REX 1896

For Citrus Spraying

Rex Lime and Sulphur Solution

Minimizes Scale Troubles, Controls Red Spider, Destroys Fungus Growth, Tones and Vitalizes the Trees.

For Deciduous Spraying

Rex Lime and Sulphur Solution

Kills the Insects, Destroys the Eggs, Deadens the Fungus Spores. Is a Tonic Fertilizer and Vitalizer for the Trees. Is the Best General Clean-up Spray there is. Most Efficient and Used in Larger Volume for Peach Blight Year after Year.

For Vineyards

Rex Lime and Sulphur Solution

Sprayed on vineyards during dormant season, destroys the fungus spores and equals any spray in controlling mildew.

The Rex Companies Specialize Spray Materials and Our Chemists Devote Their Entire Time to This Work. Eighteen Years of Continuous Spray Business Means That REX SPRAYS Have the Virtue. They are the Standard.

REX LIME and SULPHUR SOLUTION
REX CRUDE OILS and DISTILLATES
ARSENATE of LEAD BORDEAUX PASTE
PHENOLS, ARSULPH, ETC.
WRITE FOR BULLETINS

California Rex Spray Co.
BENICIA, CALIFORNIA

Selling Value of Brand.

[Written for PACIFIC RURAL PRESS]

"Fruit buyers of eastern auction markets select fruit by its brand. Many will not inspect fruit of other than certain brands," says J. O. Cook, the Boston representative of the Fruit Growers' Exchange. They discount unknown brands because they are afraid of them. Of course brands under which they have found dishonest packs are left for the peddlers' wagons. But on the whole, Mr. Cook says, California packs are more honest than those from some other sections. Gold Buckle and certain other brands are always top notchers there because they are dependable and well known.

A representative of the Philadelphia Auction Co. tells how a bad year for blue mold killed a well known brand of California oranges so badly six or seven years ago that it was never resurrected. Oranges from that locality have had to be sold under other brands since then. Ralph Winn, another Philadelphia auction man, tells of another brand of California fruit which got a bad black eye last season because the first few cars were badly molded.

While a brand is a fine thing for good fruit, it is a death warrant for that in which some bad stuff is found. A good reputation is hard to keep, but a bad reputation stays with a brand closer than a brother. Mr. Winn says, however, that if you keep at the fancy trade persistently your brand can "create a demand" and "build a reputation for itself" that will sell your oranges when the market is glutted. This reminds us of the point made by Mr. Young of the Cal. Fruit Growers' Exchange at Philadelphia, that a steady, dependable supply is necessary if you want steady dependable customers. A steady trade can not be worked up for a brand which comes to a given market intermittently, being shunted to whichever market seems to promise the highest prices. A shipper must stick to the same market even when prices are down—he will get the best going then because only the regular brands sell at all.

Color of Wrappers.—More and more, according to Mr. Young, the wrappers are being left on the oranges when displayed on fruit stands in his territory. This advertises the Sunkist and Red Ball brands of the Exchange and creates a demand. One who finds Sunkist oranges uniformly good demands them in preference to unknown brands. The dealers want fresh fruit shipped directly to their market rather than some that has been diverted from one market to the other, finally arriving at auction in a more or less deplorable condition.

The color of the wrapper or the printing on it counts for much. One dealer in Trenton, N. J., always calls for red wrappers. True it is that the blue wrappers seen on many oranges are decidedly suggestive of blue mold and tend to create prejudice at long range. Some wrappers have altogether too much colored printing, some have a slovenly design. The wrapper that is most attractive sets off the natural color of the ripe orange as seen through the wrapper, tells where the orange came from, and what organization packed it.

FUTURE OF LEMONS IN CALIFORNIA.

(Continued from page 527.)

pers who have been in the business for eighteen or twenty years who have not established one single regular customer during that time. During the low price periods the cars shipped by these packers are shipped tramp and diverted from point to point until they reach the Eastern auction in bad condition where they frequently sell for little more than freight.

Co-operative Marketing.—The future of the citrus business, with the enormous increase in the production of oranges and lemons, which will have to be marketed during the next few years would indeed be discouraging were it not for the fact that the growers, through years of past experience, have perfected and built up the most perfect and efficient marketing system in the world, the California Fruit Growers' Exchange. This co-operative organization is honestly and ably handled, and through it the packer-grower can ship his fruit with a full daily knowledge of market conditions, fruit in transit, and on track in every market in the country, so that he has such intelligent and comprehensive knowledge of all of the conditions that he should be able to sell his fruit for every dollar it is worth all of the time and without any selling profits to anyone between the producer and the wholesaler, and without any danger of loss on collections; truly a marvelous system that should be receiving the support of every grower, as it is the salvation of the business and without it the industry would perish. The California Fruit Growers' Exchange carries on an extensive advertising campaign by means of which the consumption of oranges has been greatly increased. This advertising is being extended to include lemons.

Future of the Lemon.—An attempt has been made in the foregoing to give the hard, cold facts surrounding the lemon industry in California without regard to land boomers and promoters, with an earnest desire to assist in the problems of the industry. Their solution lies in how the growers and packers will meet the conditions that have been pointed out. Personally I believe the lemon business has a good future for the growers who are earnest, energetic, intelligent, and who have sufficient training, experience, and good judgment to enable them to spend money freely and wisely for the benefit of their lemon groves; and who will otherwise take advantage of every opportunity to place themselves in the front rank in this industry.

Agricultural College Graduate
with large practical experience on California ranches is looking for position. Thoroughly up-to-date and just finished short course at Davis. P. T., 2435 Oregon St., Berkeley, Cal.

FRANQUETTE

ALSO MAYETTE
All trees grafted on California Black Walnut Root. Sizes 3 to 10 feet. Write for prices.
SUNSET NURSERY
525 W. San Carlos Street San Jose, Calif.

$200 to $300 an Acre From a Walnut Grove

in full bearing is not unusual and many groves are producing even more. There's money in Walnuts.

MAYETTE! True Wiltz Strain! For productiveness, freedom from blight, and wonderful Quality, the Wiltz strain of Walnuts has no equal in any other of the standard varieties. Late Bloomer.

FRANQUETTE! True Vrooman Strain! Next to the Wiltz Mayette, the best Walnut for Northern and Central California. Late Bloomer.

Our Scions of Franquette and Wiltz Mayette, cut by R. Wiltz, a pioneer Walnut grower, are not only absolutely true to the strain, but are from selected trees. They are the best.

Write Us First

The Silva-Bergtholdt Co.
P. O. Box B Newcastle, Cal.

SECOND HAND PIPE
Very best quality of selected second-hand water pipe and standard screw casing pipe. For quality and low price you make no mistake when buying water pipe of the Weissbaum kind. Largest pipe works in the west.
WEISSBAUM PIPE WORKS,
160 Eleventh St., San Francisco.

Beautify California For 1915
Sow that vacant lot with California Wild Flowers Seeds and show our visitors something typical of our Golden State. My pamphlet, "How to Beautify Your Town and County for 1915," mailed free upon application.
THEODORE PAYNE
CALIFORNIA WILD FLOWER SPECIALIST.
345 S. MAIN ST. LOS ANGELES, CAL.

Kirkman Nurseries
RELIABLE TREES AND VINES

We again solicit the fruit tree and vine orders of the planters of the West, knowing that nothing but the Best will satisfy the experienced buyer. Twenty-eight years of successful nursery business has proven the quality of

KIRKMAN TREES

and the treatment Kirkman accords his customers. Our steadily growing patronage has demanded that we grow more stock each year, until we now have more than five million trees and vines growing in our nursery plants in California and Arizona. A considerable portion of the stock in our nurseries, which will be ready for delivery this coming winter and spring, is already sold to early customers, but we still have a complete stock of all varieties of fruit trees and vines, as well as a general assortment of ORNAMENTAL and SHADE trees, etc, etc. What are you going to plant? We have it, without doubt, in large or small quantities. Illustrated price catalog on application. Please mention what varieties you are expecting to use.

KIRKMAN NURSERIES, P. O. BOX 604, FRESNO, CALIF.

MAKING DRONE CITRUS TREES WORK.

(Continued from page 521.)

orchards, trees having very dense, compact, spreading, drooping, erect, or open habits of growth. The time of production of fruits is correlated with the type of the tree, some types producing most of their crop in the autumn, others in the winter and spring, and others during the summer months. The open, productive type of all varieties under observation, produces fruit more or less regularly every month in the year. The amount of production is correlated with the type, the productive types of trees frequently bearing five times the amount of fruit that the unproductive types produce during the year, under comparative conditions.

In our performance record plots, we have found that the commercial quality of the fruit is correlated with production, that is to say, the most valuable commercial fruits are borne by the most productive trees, while the fruits of poorest quality are produced by the most unproductive types of trees.

Propagation of Productive Types.—As soon as the behavior of the different types of our lemon varieties was found to be of great practical importance, experiments were begun with the propagation of the different types, in order to determine whether it is possible to isolate, by bud selection, the different types of trees in the established lemon varieties. Two methods were used for studying this problem. In one case, the unproductive type of trees in established orchards were rebudded to productive types. Under the other method, buds were selected from productive and unproductive trees and propagated, the progeny of each parent tree separately, in nurseries. The topworked trees have now come into fruiting, so that conclusions may be drawn from the behavior of select buds on these rebudded trees. The nursery trees propagated from select parent trees, based on performance records, have not come into full fruiting as yet, but their growth and the tendency to fruit production is such that we may safely draw conclusions as to this method of propagation.

Private Performance Records.—Every lemon grower should keep a performance record of some or all of the lemon trees in his orchards. We believe it is only by such means that exact and reliable information can be obtained as to type and individual tree behavior in established orchards. In our performance records, we secure exact data as to the number and weights of the fruit borne by the individual trees in our plots, the number of seeds, the number and character of the bud sports on different trees, the character of the cured fruits, together with such other information as may be of value in drawing conclusions as to individual tree behavior. In practical orchard performance record work, a record of the number of boxes of fruit per tree, or the weight of the fruit per tree, or the number of lemons per tree, as is most convenient, is being used in California with satisfactory results.

Since the amount of production is correlated with the commercial quality of the fruit on individual trees, it seems that the most important practical consideration for the lemon grower is the total production per tree.

Securing accurate performance records of individual trees in an orchard requires certain simple equipment and some time. The individual trees must be numbered. The plan we have found most satisfactory is to paint the number on the tree trunk. To avoid confusion, we number the block, the row in which the tree is located in the block, and each tree in the row, counting always from some fixed point, as the irrigation head. The numbers are always placed in the same relative position on the tree trunks. Some of our numbers are six years old and are still in good condition. The individual tree number has been found of service in many ways aside from performance record work.

In securing a record of the weight of fruit, some kind of scales or balances must be provided for this purpose. In one system in practical use, the scales are mounted on a light, portable truck. As the trees are picked, the boxes of fruit are set under the trees where the lemons can be weighed when convenient. Printed forms for systematically recording the data secured from individual trees at each pick should be provided. The data from the different picks throughout the year, when added together, show the individual tree production for that year.

We hope that more lemon growers will take an active interest in this matter and arrange to make some individual tree observations in their orchards, even if it is impracticable to keep an individual tree record of their orchards as a whole. An individual tree record of 100 trees is well within the possibilities for the grower, and that the information secured from these observations and records will justify the time and expense necessary for making them, we fully believe.

Rebudding Drone Trees.—That most, if not all, of the drone trees can be topworked successfully and replaced with productive and desirable fruiting tops has been demonstrated beyond any question of doubt, both experimentally and practically.

Two years ago last June, the National Orange Company on the Chase Plantation at Corona, topworked about 3,000 trees of the unproductive so-called shade tree type of the Eureka variety, bearing coarse, poor fruits. Buds were selected from trees of the open, productive type of Eureka lemon in the same orchard. All of these topworked buds have come into fruiting. In a few cases the buds failed to grow, and sprouts from the original tree were allowed to grow. In some cases the buds on one of the main rebudded limbs of the original tree grew, while the buds on another limb of the same tree failed and the sprouts were allowed to grow. In such cases the sprouts from the original trees are exactly like the trees which were cut back, while the buds from the productive trees, without any exception, reproduced the characters of the fruitful type from which they were cut.

In a performance record plot as a whole, the buds of the unproductive type trees have produced more on the average, at a single pick, than the original unproductive trees, in which the buds were inserted, had produced during an entire year. Not only is this true, but on these rebudded trees we have found an average of about 90 per cent of first grade fruit in comparison with about 20 per cent of first grade fruit borne by the unproductive trees before they were rebudded.

Some Results on Other Citrus.—We have equally important and convincing results with the orange and grapefruit rebudded trees, the fruit from the select buds having marvelous uniformity.

They have come true to type, almost without any exceptions, in the thousands of rebudded trees of these varieties of citrus fruits under observation.

Budwood.—In the selection of budwood from parent trees, it is desirable to cut an ideal fruit of the type desired with each budstick. In the beginning, the use of this budwood caused considerable protest from practical budders, in that it meant cutting off one or more fruits with each budstick, and it was frequently stated that such budwood was too small to work successfully. Experience has demonstrated that the loss due to cutting off the fruit with a budstick is small as compared with the importance of the several buds on each budstick. It has been fully demonstrated that this budwood is as satisfactory, if not more satisfactory, from the standpoint of successful budding, than larger and older budwood, which has heretofore been used. The reason for cutting off good fruits with each budstick lies in the frequent occurrence on most, if not all, of our lemon trees, of bud-sports. By cutting off the fruit with the budwood, we are able to avoid taking budwood from sporting limbs which are off type.

CROPS

Crops pay or don't pay—according to whether they are good or bad. It uses the same amount of ground, plowing, harrowing, seed and cultivation, whether the crop be good or bad. If the crop is good, it will cost more to harvest it.

The idea is this: Make your ground, plowing, harrowing, seed and cultivation positively produce a good crop. In other words—insure your crop, by using

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Renewing Blighted Pear Orchard.

[Written for PACIFIC RURAL PRESS.]

Did Hayward Reed succeed in controlling pear blight in his big Sacramento orchard? A month ago he finished cutting it out as described in a previous issue of the Press. Since then, inspectors have examined every tree to see if it is healing properly and if not, why not. Although Mr. Reed himself is in Japan now on vacation, the orchard is being pruned under direction of A. Morley, and every pruner is watching for blight spots. In spite of the rigid inspection after the blight was cut out, occasional spots are now discovered and disposed of wherever a branch shows highly colored leaves or has dropped them peculiarly before the rest of the tree; there suspicion rests and special search is made for cankers.

Walking through the orchard by twilight now, you would find yourself in a shadowy specter land, full of pitfalls. Here and there whole big trees have been dug out and their roots followed so far that no sprouts are likely ever to come from what are left. Diseased prunings have been burned in many of the holes left where the trees were removed In some sections of the orchard there is scarce a tree that has not a deep hole dug beside it and among the big roots. And the whitened strips which wind and twist up the trunks like naked specters in agony from where they emerge from under ground among the roots, are found to be the naked wood exposed by peeling away the diseased bark in following the disease beyond its last appearance often eight or ten feet up and down the trees. Some of the trunks are almost bare of bark, but always a little strip at least remains to supply the top with root sap. These trees will not bear much fruit next season, but there are other sections of the orchard where such specters are less numerous and the big old battle-scarred veteran trees have come through the massacre with green colors still bravely flung to the breezes. Numerous fruit buds on these big trees give promise of a great crop next year.

The pruners leave all fruit buds possible.

The tree needs a heavy load of fruit to retard growth of the succulent shoots that are so acceptable to the blight.

"Besides this a great deal of the tops have been removed, but the roots have not been pruned, so there will be a lot of excess sap next spring," says Mr. Morley. "Might as well direct that sap into the fruit and get all the crop possible; for however heavily it sets, there is not likely to be more fruit than would be on a normal tree." But there is no use leaving buds on the main limbs if you leave the centers so thick that plenty of light and circulation can't reach them, so the inside of the tree is thinned to attain that object, more or less according to the amount cut out in fighting the blight.

The new growth that has come on the tree, if not cut out entirely to thin it, is cut back to leave 12 or 15 inches—this to develop new fruit spurs next year to bear fruit the year following that. So much is left to restore the bearing surface to its normal amount as soon as possible. Wherever a shoot projects into the space left by a blighted limb, it may be topped to encourage stockiness and fruit spurs, but not much of its top is cut off. Where nothing projects into such a space, a shoot growing beside it is topped back leaving the upper bud on the side toward the space. It will send a shoot in that direction next year.

Mr. Reed doesn't prune away the lower limbs—he leaves as much growth there and on the trunk as can be encouraged without interlacing. Ordinarily, however, a water sprout that has shot straight up this season and looks like it would keep on going up without a pause to form fruit spurs along the way, is cut off next to the trunk.

The trees are spread out in all sorts of shapes now—there is no symmetry because of the recent massacres—and many of the branches hang out and downward even without a load, in the way of the passerby. This interferes a bit with cultivation, but not so much as you would think. Little mules are used on the cultivators, and they dodge the branches. A single mule pulls a narrow plow next to the tree rows, and the long disk cultivators and drags work up to the trees though the mules walk at some distance away, alongside the row.

The small disadvantage in cultivation is greatly overbalanced by at least 100 per cent increase in the efficiency of fruit pickers. They can gather half of the fruit on these trees as they stand on the ground. That is no small advantage when you are in a hurry to get the crop into a promising market and help is scarce. This advantage is gained on pears and apples more than on peaches, because the spur which bears fruit this year, at the same time is developing a fruit bud to bear an inch or so farther on, next year. Very likely, too, it has developed a leaf along its side from the axil of which a spur will develop next year to bear the following season.

In some places the spurs are too close together or have become too long safely to support the fruit that is likely to set. These are not so common in Mr. Reed's orchard, but where they are formed they are shortened or cut off entirely. In selecting which spurs to cut off, choose those with the least likelihood of setting fruit. A long-tapering sharp pointed bud whose base is no larger than the twig it grows on, is likely to produce leaves but not fruit. Where you see a bud shaped like a blunt plumb bob, with a sort of neck about its base and a swelling of greater dimension than the twig which bears it just above that neck, then a sharp slope to a blut point, there you may expect to see seven flowers next spring and probably two fruits, which will mature. If some spurs must be trimmed out, leave those with such plump buds.

Examination of the scarred trunks of the blighted and surgically treated trees in most instances already shows a line of new bark emerging from under the old bark edges to which blight was cut away. This shows healthy recovery. In some cases the old bark is loosened from the wood and you can't see the new bark which is probably coming all right; and it had better be cut out at the first opportunity. At any rate, if you leave a blighted spot on the trunk till spring, it is more than likely to exude a sweetish gum when sap flow starts in spring, and insects will get into it, carry it to soft new twigs and blossoms, and start the disease anew in a thousand places. Don't leave any blight in the pear trees till spring. We think Mr. Reed has better control of his blight than nine-tenths of the pear growers in his county.

Olive Trees

Olives worked on Picholine Root have stronger growing and deeper feeding root systems than those grown from cuttings.

Our Olives are worked on Picholine Seedlings, the wood being cut from trees having a record for productiveness and size of fruit.

They are prize winners—the kind you want. Write *Us* FIRST.

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COCOANUT MEAL, BARLEY, BRAN.

To the Editor: How does cocoanut meal compare with barley and bran for dairy cows and hogs? Costs $1.60 per cwt. and bran and barley costs a trifle more.—T. H., Escalon, Cal.

[Answered by F. W. Woll, University Farm, Davis]

[Cocoanut meal makes an excellent feed for dairy cows and is also a good hog feed although it is not as often fed to the latter class of farm animals as to cows. It has a some what higher content of digestible components than barley and, pound for pound, is worth more than either barley or wheat bran as a feed for cows. It is always fed mixed with other grain feeds, however, the kinds and amounts of these depending on the relative cost of the feeds. At the market prices given, cocoanut meal is the cheapest of the three feeds and it will therefore pay to include a considerable proportion of this in the mixture. If desired, as much as 3 or 4 pounds per head daily may be fed to dairy cows, but if a good quantity of alfalfa hay is fed, it will not be desirable to feed much more total grain than that. I would recommend a mixture of rolled barley, wheat bran, and cocoanut meal in the proportion of 1:1:2 by weight, feeding one pound of the mixture for every 4 or 5 pounds of milk that the cows are producing.]

Another subscriber wants to know where lives the man whose Thompson Seedless pruning we described recently. He signs his initials only. We can answer it when he sends us his full name and a stamp for a personal reply, since this answer would not be of personal interest to many other readers.

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The benefits of liming are due to its chemical, physical and biological effects upon the soil.

Chemical effects — Makes "sour" soils "sweet" by changing an acid soil condition to a slightly alkaline one. Acidity in soils is very detrimental to the growth of anything, while a slightly alkaline condition is ideal. Adds to the supply of the foods: nitrogen, potash and phosphoric acid.

Physical effects — Makes clays and clay adobe soils looser, prevents their packing, baking and cracking, makes plowing and cultivating easier, and, in general, makes the soil a healthier medium for plant growth.

Biological effects — Favors the growth of useful and beneficial bacteria and other micro-organisms of the soil, especially those which live in the nodules on the roots of alfalfa, vetch, peas, beans and other leguminous crops.

Lime builds up the soil, restores impoverished lands and because our lime is not caustic it may be used in almost any quantity at any time. We recommend applying about one ton to the acre for beneficial results.

Nearly all lime used, no matter in what form, is prepared directly or indirectly, from deposits of calcium carbonate, chief of which is limerock, from which our ground limestone is made.

Our ground limestone for fertilizing is made of the purest quality of limerock obtainable, is an honest material, honestly prepared and ground to that degree of fineness recommended by the Agricultural Department of the University of California as rendering the greatest efficiency.

You can get immediate deliveries from us either in bulk or packed in 100 lb. sacks. Write us for further information, prices, etc.

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We Start You Right on a 40 ACRE FARM

The Land Lies Ready for the Plow and Near Two Railroads.

This Wheat is Five Feet High and 1200 Acres Across.

This Olive Grove Shows What Is Being Done Within the Tract.

Transforming the Plains Into Orchards.

From the bare land, to the wheat field, to the aristocratic olive or citrus orchard; and even to avocados—such a transition is the work of pioneers with clear sight toward an old age of comfortable competence—such a transition is going on in the undulating plains ten or fifteen miles north of Marysville. The planters of olive orchards and fruit trees there today are the horticultural leaders of tomorrow, for the soil is right, the drainage is right, the irrigation is simple, the climate is right, and the class of people who undertake such a transformation is the sort that can co-operate to market right.

Here is a district of many thousand acres of loamy soil ten to twenty feet deep and underlaid by waterbearing gravel in which the water table can scarcely go below 25 feet, and has not been found above ten feet under the surface. With the Feather and Yuba rivers within a few miles, the permanent water is assured at such depth that a pump on top of the ground supplies sure irrigation.

Two railroads, the Western Pacific and the Southern Pacific, furnish transportation in competition with the water routes.

The land is gently rolling, just enough for drainage, it lies ready for the plow and the wheat crop—no clearing to do, no brush to handle or stump pullers to buy.

The central picture, taken last July, shows what thousands of acres in this district can do with grain when the landless man gets onto the manless land. It grows luxuriantly five feet high and thickly stooled out.

The crop from this wheat field of 1200 acres the past season was enormous, and it had never been fertilized or irrigated.

The lower picture, showing an old olive orchard on the same tract, proves that this fruit and any others which thrive under similar conditions, are favored and encouraged by the climate.

This, the final step in the three stages which are already proved on this tract, an orchard that will be yielding more and better fruit for your grandchildren as well as yourself, an orchard that yields good commercial returns within five years from planting, is within your reach.

A large tract of this fertile soil in a favorable climate, with plenty of available water and good drainage, and no alkali, is being sold in twenty to forty-acre farms. Orchard trees are furnished for the planting of nearly half of the farm Grain seed is furnished for the rest of the land to provide quick income, because the trees won't bear commercially for a few years. Wells and pumps are installed for irrigation and home use.

All kinds of vegetables and poultry thrive—the living expenses may be reduced to a minimum by having a garden, poultry yard, and perhaps a cow.

There is immense satisfaction in growing up with the country, in transforming fertile plains into grain fields, and orchards, and homes, amid neighbors whose interests are the same as yours.

THE PRICE INCLUDES

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Dudley Moulton

Formerly Deputy Commissioner of Horticulture of California, Expert, United States Department of Agriculture.

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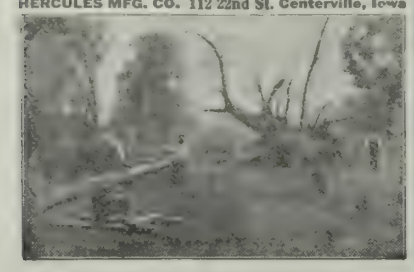

Mechanical Power on the Farm.

ADVANTAGE OF ELECTRICITY.

[Written for PACIFIC RURAL PRESS by E. P. Gibson, General Electric Co.]

Thirty-five years ago, October 21, Thos. A. Edison created his first incandescent electric light. In honor of his achievement in developing the modern Edison Mazda, the whole world paid him homage on this thirty-fifth anniversary. At the same time that the electric lamp was making such rapid development, electricity as applied to all lines of work continued with enormous strides toward greater things. Now we have electricity on the farm, making man and woman's work easier and more pleasant.

Our agricultural experts of today are endeavoring to assist the rancher in getting the greatest production per unit area at the least possible cost. They increase the yield by proper selection of seeds, proper cultivation, rotation and irrigation. The other phase of the problem is now being solved by using electricity whereby the overhead charges are decreased at the same time the gross income is increased, leaving a larger net earning in the hands of the rancher.

In Germany, where the average-size farm and the acreage per capita is much less than in California, it is essential that each operation be conducted with considerable forethought. They must make each move count. We find them using electric power for plowing, threshing, grinding, and all the principal operations on the farm.

The California rancher needs power first for irrigation. Since the electric power companies have sent out their network of lines through the country the electric motor is pumping millions of gallons daily, besides many uses in the barn and field such as feed grinding, silage cutting, wood sawing, etc.

In the dairy, motors are being used on churns, separators, and refrigeration. The farm shop has many places for the use of motors, but let us not forget the farm home with its hot and cold water supply, the electric iron, vacuum cleaner, washing machine, and the rest of a hundred uses.

In figuring the cost of operation of an electric motor there are a number of points to be considered.

Actual Power Cost.—Power is, in most cases, paid for by the unit of measurement known as the kilowatt hour. To determine how much power is consumed by a motor the following formula may be used:

Kilowatts per hour equals horsepower times 746, divided by 10 times K.

The "K" in the formula represents a figure varying from 85 when a small two or three horsepower motor is used, to 90 when a fifty horsepower motor is used. By multiplying this result by the cost per kilowatt hour, the cost per hour is obtained. Thus for a 10 h. p. motor:

Kilowatts per hour equals 10 times 746, divided by 10 times 86 equals 8.66 kilowatts.

If the cost of the power is 2.5 cents per kilowatt hour the cost per hour would be 2.5X8.66, which equals 21.65 cents.

Depreciation and Interest.—In making a comparison between electricity and other forms of power this figure plays an important part. The life of the motor, under normal care, is indefinite. There is nothing to wear out in a standard three phase motor but two bearings and these are easily replaced at a small expense. However, let us say the life of a motor is 16 or 17 years, which is conservative. Therefore the yearly depreciation will amount to 6 per cent. The interest on the money invested can be figured at 6 per cent. The sum of these results divided by the number of hours the plant is to operate per year, will give the fixed charges per hour.

Repairs.—Then last of all comes the least of all—the repairs and attendance. The repairs can be neglected because they are too small to enter into a comparison. The attention needed to operate a motor is negligible. One minute will start the motor and except the oiling about once every two weeks the motor would run continuously without any attention whatever. Automatic control can be arranged so that the motor will start and stop as desired.

Suppose we have a 10 h. p motor operating 120 days per year, 8 hours per day.

Investment.—Approximate cost of motor with compensator pulley and base, fully protected and installed, $200.

Operating Charges.—Cost of power per hour (as figured previously) $21.65.

Yearly depreciation on $200 at 6 per cent	$12.00
Yearly interest on $200 at 6 per cent	12.00
Total	$24.00
For 960 hours operation:	
Depreciation and interest per hr. equals $24 divided by 960 equals	2.5 cents.
Oil, about ½ gal in 2 years per hour	0
Attendance per hour	0
Repairs per hour	0
Total cost per hour for 10 h. p. motor,	$24.15

The following reasons show why electric power is desirable for use on the farm:

(1) It is reliable. (2) Requires no attention. (3) Has a great overload capacity for emergencies. (4) Has a constant speed. (5) Can be controlled automatically or from a distance. (6) Can be attached to floor, wall or ceiling. (7) Reduces fire risk. (8) Only electric motors are available in fractional horsepower sizes. (9) Power is available for lights in home, a flat iron for the housewife, and modern conveniences for everyone.

AUTOMOBILE TO SHARPEN WITS

[Written for PACIFIC RURAL PRESS]

"I used to keep three horses to drive, but the good roads are becoming so general now that they are too hard on the horses' feet, so I get a little auto," says Wm. Sherriffs of Santa Clara county. He believes that his small machine would not be any more expensive than a team, all things considered, if he didn't travel any more than he used to with the horses. "But we go 30 to 40

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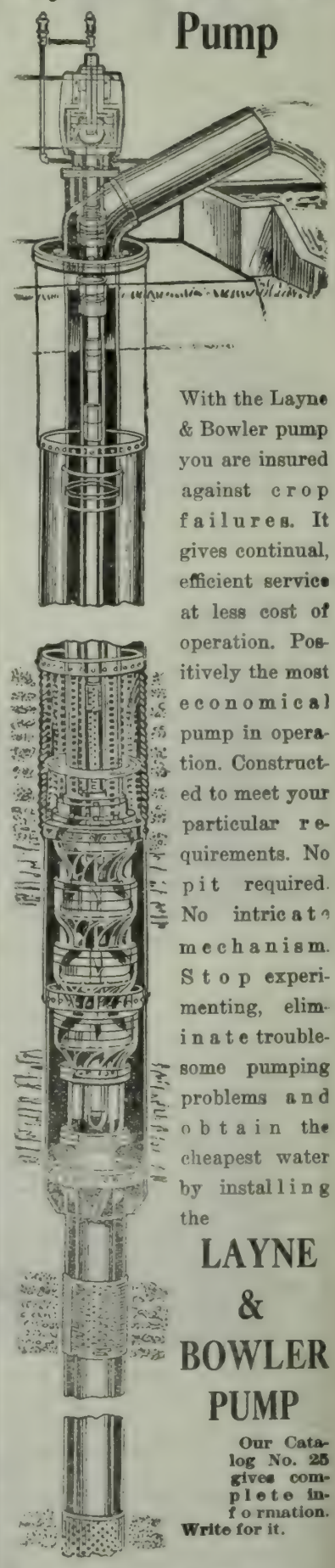

With the Layne & Bowler pump you are insured against crop failures. It gives continual, efficient service at less cost of operation. Positively the most economical pump in operation. Constructed to meet your particular requirements. No pit required. No intricate mechanism. Stop experimenting, eliminate troublesome pumping problems and obtain the cheapest water by installing the

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miles now where we used to think 6 to 8 miles was a far journey. We get the extra exhilaration of a change of scenery and are willing to pay for it." This tendency of farmers to scour the country in automobiles is a great factor in scattering about the new cultural and mechanical kinks devised on every farm to meet conditions more favorably. It causes a great interchange of ideas. The sharpening of men's wits on each other has always been a fertile source of development.

DISTILLATE FOR AUTOS.

[Written for PACIFIC RURAL PRESS]

Distillate being cheaper than gasoline and the supply greater, it is increasingly important that a means of using it in automobiles be perfected. A device has been patented by Ralph Skinner of San Joaquin county whereby water is heated in a copper tube which is run through the exhaust and then coiled up in a "vaporizer," through which distillate runs and becomes heated to about 190 degrees. Much higher heat would kill the "expansion units" or force of the oil, but it can never go above the boiling point of the water. The distillate is then drawn through the carbureter and back through the vaporizer, where it is again so heated, as a fine spray mixture with air this time, that it explodes readily in the ordinary engine. Oil of as low gravity as 38 degrees B. is usable, though 40 to 60 degrees is best.

MEANING OF "HORSE PULL."

[Written for PACIFIC RURAL PRESS]

At the tractor demonstration last spring near Sacramento, the Samson demonstrator insisted on telling us that their machine was "8-horse pull," which he conceived would be more intelligible to farmers than the usual "horse power" expression.

A horse power is the power required to raise 550 pounds one foot per second. A 16 h. p. engine exerts 16 times that much energy on the piston. In the gearings, and the power used on traction machines to move themselves, 1-3 to 1-2 of this horsepower is lost. So, as indicated in another article, the actual pull of the tractor on the plow or wagon is reduced that much. It is this latter pull "on the drawbar" that our friend meant when he said "8-horse pull."

KEEP THE TRACTOR TIGHT.

[Written for PACIFIC RURAL PRESS]

The tractor manufacturers send their prospective purchasers to me for practical demonstration of tractor efficiency; says J. S. Gibson of Colusa county. "A neighbor of mine, however, was not formerly recommended to such prospective purchasers. His son operated their machine and it was always broken down, giving poor efficiency, losing lots of time for repairs, and requiring new parts. It cost more for gas, too. The trouble was that the boy never would overhaul the machine until something fell to pieces and it wouldn't run. On my machine, I tighten up all the nuts and examine everything regularly, and always listen for noises that indicate any looseness.

"If any unusual noise begins, I always stop and fix it up. My neighbor's boy would let it bang away till something would get lost or broken. I fixed up an extra powerful engine and geared it to the tractor so the engine runs at minimum speed. It is the excessive speed that knocks out our auto and other engines. Take the big, slow-moving stationary steam engines, they almost never wear out or break, they just keep on steadily and powerfully without jarring vibrations. I used to overhaul my neighbor's engine for him at the end of the season. I told him to get a driver recommended by the manufacturer. Not all such drivers are good ones, but this one was. He cost my neighbor $5 a day in summer and $4 a day in winter, but at that, he saved more money for him by keeping the machine in order driving carefully, losing practically no time for breakdowns, and getting the work done when it ought to be done. He is a good deal cheaper man to have handling the expensive machine than a $1 man.

REPAIRING TIRES.

Many old auto and bicycle tires are thrown away before they are worn out, because apparently they are not worth the expense of repair. This feeling comes from our inability to vulcanize them ourselves, as we feel that to "vulcanize" is something intricate, and hence a ban is placed upon repair work at home. This should not be, for the process is a very simple one and consists in cleaning the defective parts thoroughly, filling in the break with raw rubber mixed with certain chemicals and heating the part, at a temperature of about 265 degrees, for about fifteen or twenty minutes.

Small vulcanizing outfits may be had at moderate prices, so that repairs may be made at home.

F. G. PERSON, Col. Agr. College.

Don't burn crude oil in frost pots. It is too expensive and the residue is too hard to take care of. Use 20 to 26 degree oil from which the expensive gasoline and kerosene have been extracted, also the asphalt. It is cleaner, cheaper in price, burns longer, has more complete combustion, flows readily in cold weather when crude oil is like molasses and you are in a hurry.

The Platt Investment Company of Pasadena have contracted to install a 300-foot centrifugal Layne & Bowler multi-stage pump on their land near Rialto. The water conditions in this district are said to be exceptionally fine and an excellent supply of water should be produced.

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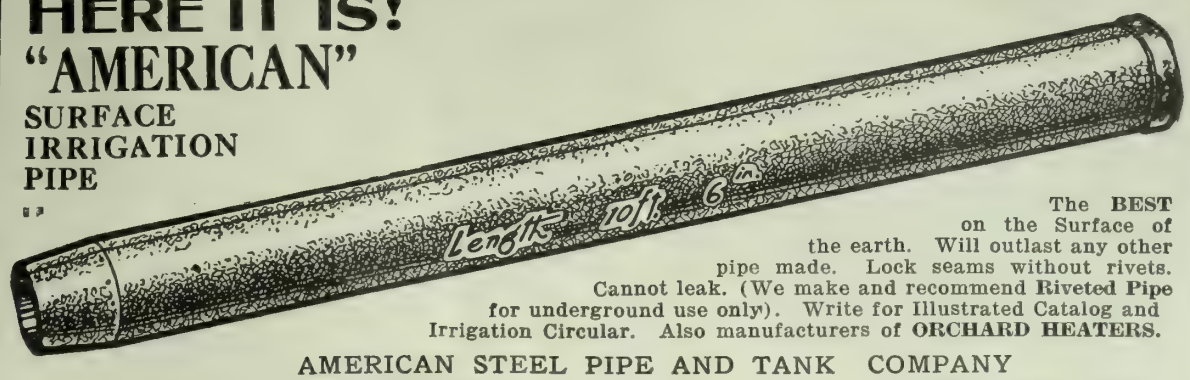

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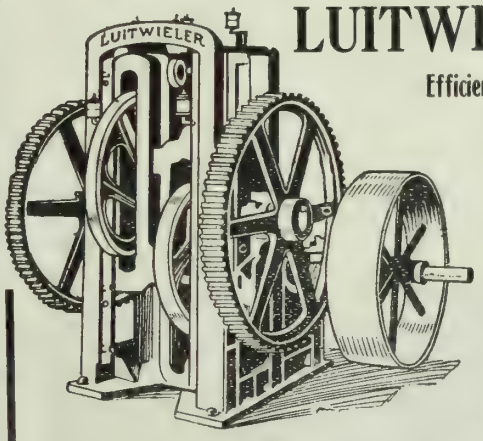

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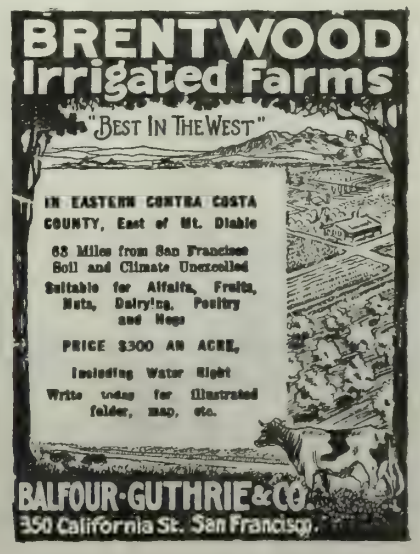

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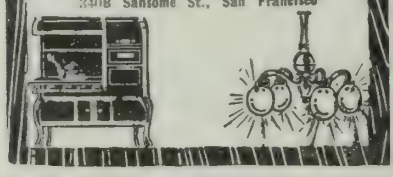

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Co-ordinating Water Problems.

[From Address by G. McM. Ross, at Waterways Convention, Stockton.]

The subject is as vast as the territory to be treated. The summit of the Sierra Nevada mountains, and the overflowed and swamp lands of the valley; the reclaimed and leveed lands of the Delta that extends to Suisun Bay. The problem involves the control and use of the flood waters that reach the plains from 11 rivers, the Kern river, Tule river, Kaweah river, King's river, San Joaquin river, Merced river, Tuolumne river, Stanislaus river, Calaveras river, Mokelumne river and Consumnes river, and as many creeks which assume the dignity of rivers in flood season, all discharging their waters in the San Joaquin valley from the mountains, from Tehachapi to the Consumnes river, a line approximately 250 miles long.

Arable Area.—The valley and low foothills that can now be cultivated, contain over seven million acres of land. As these lands require a minimum of two acre feet of water, or a total of fourteen million acre feet for the irrigation required by intensive agriculture, a large part of the San Joaquin valley must remain uncultivated, as not enough water falls within the drainage area for the requirements of intensive agriculture.

For at least fifty years the State and Nation has from time to time called for and secured reports on the various phases of our water problems. We have received the kindly consideration of a long line of Presidents who have all said kindly things for the development of our inland waterways and the control of our flood waters. Congress, however, has done but little to secure for our people the required protection. The appalling loss of life and destruction of property still continue. Our uncontrolled national floods exact a yearly toll of hundreds of lives and over a million dollars in property, and no one has yet found a way to overcome the inertia of Congress. The reason has been given that the dead have no votes, and the ruined no influence; Congress cannot be expected to deal in abstractions, but must give attention to those who are still alive and who are influential. Senator Burton may have discovered a way of overcoming the inertia of Congress and he may be able to secure for us such legislation as is promised by the Newlands Bill, to secure which the people of Stockton have been actively at work for some years, through the River Regulation Commission of Stockton.. During this time they secured a generous and specific appropriation for California as a feature of the Newlands Bill, which is now before Congress. They have unselfishly worked for the National measure; they have conducted a state-wide educational campaign and have made their influence felt in the flood stricken sections of our country. What they are so anxiously looking for is a way to overcome the inertia of Congress and to start the required work of flood control and internal development so urgently needed by our nation of a hundred million of people.

California probably leads the States of our Union in the per capita number and variety of commissions; of these it can be told in the language of the grizzled boatman who was asked by the young authoress in search of local color if the story were true that he had had three wives. He answered, "Yes, and two on 'em was good." If those to whom we have delegated the right to appoint commissions would remember that this is the age of specialists and of these there are enough to fill the required commissions, we could feel assured of getting better results. For the pioneer work of production and reclamation we must have trained men, whether for digging ditches, raising potatoes or building dams.

Engineers for Reclamation Board.—It is suggested that the Inland Waterways Association can best obtain the prompt and safe development of our State for which they are organized by enlarging the scope of the reclamation board as at present organized, and in the following manner:

(1) That the State of California be made one district.

(2) That all the work now being done by the State Reclamation Board be turned over to a Board of Engineers, consisting of the county surveyor of each county and the city engineer of every city in California having such an official; that the management of all such work shall be turned over to the Engineering Department of California; that the State Engineer shall be president of the Board.

(3) That the assessor of each county shall be a member of the board.

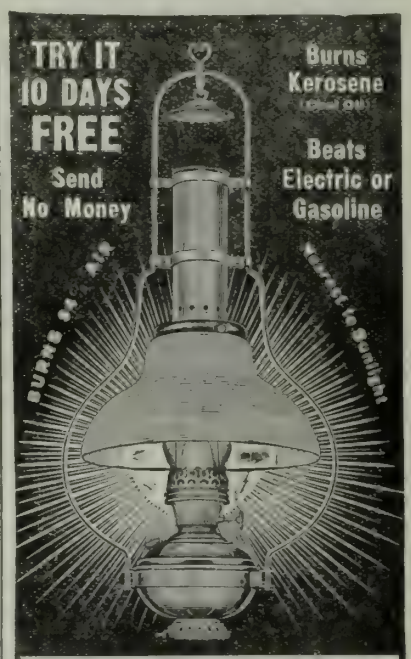
(4) That to secure safety and efficiency in the prompt development of the State, the board be empowered to engage the services of any experts required to insure the safety and permanence of the required work for the storage and use of all the waters within the State; to insure the proper apportionment of the cost of storage and distribution of water and of the use of waterways, the present system of assessing the cost of all such work as is now the rule of the State Reclamation Board shall be maintained in so far as the system can be applied to the larger plan; any work of storage, development, or reclamation required to be done in any county, may be demanded by the Board of Supervisors of such county; and it shall be the duty of the State Board to make the necessary plans for the proper execution of such work, and when these are approved by the Supervisors, to proceed with the work as provided by law; that the State Board of Engineers shall arrange for full co-operation with whichever department of the Nation may have control of navigation and the care and maintenance of navigable waters, to the end that the prompt and safe development of the resources of the State of California may be assured.

(5) That the Attorney General of this State be made a member and the legal adviser of the Board.

Under such a plan, the water problems of the south end of the San Joaquin valley can be promptly and safely solved, while other water problems of the State are being cared for. The waters can be stored in mountain reservoirs; the southern great lakes, Buena Vista and Tulare, can be drained not only without danger to the reclaimed lands in the Delta of the San Joaquin valley and Sacramento, but with decided benefit to the navigable waters of the San Joaquin.

The point I wish to make is that all of this is engineering work and to be well and safely done, can be done only by engineers.

This Congress is dealing with Inland Waterways for the purpose of



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securing and extending navigation. We have had enough experience in California to give the most positive assurance that the only safe way to maintain and extend navigation on our inland waterways is by the storage of flood waters in mountain reservoirs—in no other way can our rivers be regulated or their navigability insured. The navigation of the San Joaquin and Sacramento rivers in 1911 and 1912, two dry years, is proof of this. The absence of floods, debris carrying and levee-wrecking during the two dry years, 1911 and 1912, indicated very clearly what would result from river regulation by controlling floods, and you will do the best possible thing to improve and extend navigation on our inland waterways, and incidentally you will make possible the easy solution of every other California problem, by the storage of our flood waters.

If we find it impossible to promptly secure National aid for the improvement of our inland waterways, it will be well to remember that we have ample resources to justify the State of California in undertaking at once the work necessary to control and use the flood waters of the State. In "California, Romantic and Resourceful," John F. Davis, in so charmingly telling the story of how we won admission to the Union, clearly suggests how a sovereign people can secure their hearts' desire.

Being Done for Flood Control.

[From Address by V. S. McClatchy, at Waterways Convention, Stockton.]

The Reclamation Board is an instrumentality created by the State to do certain things necessary to the completion of the Sacramento river flood control project which the National government is not in position to do. Incidentally the Board is charged with the duty of working out, with the engineers of the State and of the Nation, a comprehensive flood control plan for the San Joaquin river, and of forcing swamp land owners to work along a general plan to the common good instead of reclaiming independently by piling the flood waters upon each other, to the ultimate injury of all.

The Sacramento river flood control project, whose completion is at present the chief concern of the Board, is not a private project nor even a district project. It is a State enterprise of great importance. The plan was formulated after 17 years' investigation by a commission of U. S. Government engineers under instructions from Congress, issued in 1893, to present, if practicable, a plan which would restore to the Sacramento river the degree of navigability which it possessed in 1860. That navigability has been seriously impaired, and at times destroyed, by the effects of hydraulic mining debris, the pouring of which into the navigable stream had not been prevented by the government.

The Sacramento river flood control project has been formally approved and adopted by the State of California; and its officials, as well as its representatives in Congress, are in consequence obligated to protect and promote it. It has received the approval of the Rivers and Harbors Committee of Congress, was adopted by the House and embodied in the Rivers and Harbors bill and would have passed the Senate but for the deficiency in available funds and the agreement to strike from the bill reference to all projects not already formally adopted. The project, however, had already received quasi-Congressional recognition by an appropriation of $400,000 made under report and recommendation of the Board of Engineers, for opening the mouth of the river, which work is a part of the project. This amount, together with a similar appropriation from the State, has been already almost entirely spent by the government engineers. It is hoped that this condition will permit the engineers to continue the work under discretion allowed by the lump-sum appropriation substitute for the Rivers and Harbors bill, should such measure pass.

The value of the project to the State's development lies in this: It is the only plan, economically feasible, which will at the same time restore and permanently maintain the navigability of the Sacramento river, care for the deposits of mining debris in its channel and tributaries, insure control of floods, preserve the valley from inundation, and permit reclamation of a million acres of rich lands, which, without it, must remain waste. In that security from floods and that assistance to reclamation the project benefits the lower portions of the San Joaquin valley, including the city of Stockton, as well as the Sacramento valley.

In restoring and maintaining the navigability of the Sacramento river and protecting the delta of the San Joaquin, the project provides the most important element necessary for an inland waterways system for California, which is the chief concern of this Association. The two navigable rivers must form the arteries of an inland waterways system, and development of such system through improvement of upper channels and canalization must be useless unless the arteries give constant and safe access to the sea. Only through such perfected system, too, can cheap freights to tide water be obtained for the possible products of the great interior valley, extending four hundred miles as the crow flies, from Redding to Bakersfield; and on such cheap water freights, must depend the development of the valley, the growth of its seaports and in a great measure the prosperity of the State.

In controlling flood waters the Sacramento flood control project will provide insurance against inundation for 750,000 acres in the Sacramento and San Joaquin valleys, reclaimed and in process of reclamation. All these lands, regardless of their present defences, will ultimately be flooded unless this project is carried out. These lands are valued at $150 per acre and upwards, and the annual crop therefrom should be worth $30,000,000 and upwards.

In controlling floods, the project will also make possible the reclamation of 1,000,000 acres of rich lands in the Sacramento and San Joaquin valleys, which cannot be successfully reclaimed if the project is not carried out. A negligible proportion of that acreage is now used for summer crop or pasture; the balance is useless. The project will create a value in these lands of say $150 per acre acre, and make possible additional annual crops of $40,000,000 or more.

It may be added that every year the completion of the project is delayed makes possible floods in the Sacramento valley and in the lower San Joaquin which may cause damage to private property aggregating many millions of dollars, and seriously impair navigation.

In securing safety from inundation to one and three quarter million acres of rich lands the project brings near the day when those lands will support hundreds of thousands of people, living on the soil, and happy, prosperous and healthy. Failing completion of the project, one million acres will be unreclaimable and will have no population, while the remaining three-quarter million, although enjoying a measure of reclamation, will, because of the insecurity, develop no communities and few homes.

To carry out this great project there has been formed, in effect, a three-cornered partnership by the United States, the State of California, and interested property owners.

The federal engineers are to carry forward so much of the work as is to be done in the river channel, and the cost thereof, about $12,000,000, is to be paid, half in half, by the United States and by California. Part of the work has been going on for over a year at the mouth of the river. The rest of the project, including the construction of all river levees and all by-passes is under the supervision of the State Reclamation Board, the federal engineers acting as consulting engineers. The expense thereof, something in excess of $25,000,000, is to be paid by interested property owners in proportion to benefits received under assessments levied by the Reclamation Board. The Board has already levied $1,250,000 for these purposes and is preparing other assessments, while voluntary work on the part of individuals and districts has expended millions of dollars and materially advanced this part of the project.

The property owners' share of the project could be completed if necessary in four years; the Nation's share, to be paid for jointly by State and Nation, would take longer even if very large annual appropriations are made.

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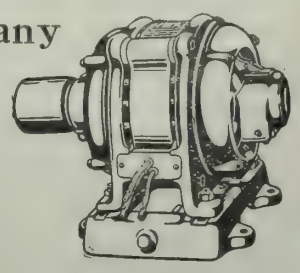

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Agricultural Review

CITRUS AND SEMI-TROPICAL.

Estimates are now being made that 100 cars of oranges will be shipped this year from the La Habra section. The new association at that place will pack most of the fruit.

The Merryman ranch near Exeter shipped a trainload of 18 cars of oranges to Australia last week. The fruit was shipped to San Francisco by rail and reshipped from there by boat.

According to reports from Oakdale, Stanislaus county, an olive buyer who recently visited that section offered to contract pickling olives from the growers for twenty years at $225 a ton.

It is said that the largest olive crop ever grown in the Paradise section of Butte county is being harvested this year. About half of the crop has been shipped to Los Angeles for pickling purposes, and the balance has been handled by pickling firms in Sacramento and Oroville.

Orange shipping has become quite brisk in the Porterville section, and from now on shipments are expected to increase daily. Packing-house managers say that prices are fairly satisfactory, and that help is plentiful.

Orange shipments were again started from the Oroville district last week, after several days of inactivity, due to the fruit not coming up to the new standards imposed by the Government. The warm weather of last week is said to have ripened the fruit very fast, and all that is shipped from now on will carry certificates indicating the acid content of the fruit.

Reports from Los Angeles are to the effect that the first shipments of oranges via the Panama Canal will leave there some time during January. It will be a test trip for the purpose of fixing rates for future traffic. It now appears certain that a cut of 20 per cent, and perhaps more, will be made in the present rail rates. One large steamship company has six large boats equipped with refrigerators with which they hope to handle a large part of the orange trade.

P. H. Kazanjian, an Armenian of Fresno county, is authority for the statement that the Armenian date will grow and produce good fruit in the San Joaquin valley. The Armenian date grows about two inches long, and the tree resembles the olive tree. The trees are propagated from cuttings, the same as grapes, and will produce heavy crops in five years after planting. Several farmers in that section are putting out cuttings this year.

The Citrus Protective League, in promoting the idea of shipping only mature oranges, has secured from E. M. Chase of the U. S. Department of Agriculture complete details which enable any grower or packing house employee to test his oranges to see if they fulfill the Government standard of not more than one part of acid to eight parts of soluble solids. The test is more easily applied than the acid-sugar ratio, the apparatus simple, and it removes the incentive to color the oranges artificially. The 1 to 8 ratio may be a bit severe, but it is far better than to allow a few to spoil the markets for the many.

DECIDUOUS FRUITS.

Practically all of the prune crop in the Windsor section of Sonoma county has been shipped, over 100 tons leaving that place last week at an average price of about six and one-half cents a pound.

A walnut tree in Sutter county measuring 100 feet in height, 16½ feet in diameter, and having a spread of 128 feet, has just been awarded the prize for the largest nut-bearing tree in America by the American Genetic Association.

The Walnut Growers' Association of Anaheim shipped about 175 tons of nuts this year. This is about half the crop grown in that section, and the prices were the highest ever known, No. ones bringing 16½ cents a pound.

Believing that he can secure a better price for his dried peaches in the East than he can in this State, William Grant of Chico has recently left for Eastern cities, where he will attempt to sell direct to the consumers. He expects to be able to get about eight cents a pound.

J. H. Smith, owner of the Citrus Heights Nursery at Sacramento, has purchased 40 acres of land near Orland which he expects to turn into a large nursery in the future. The new nursery will be mostly oranges, lemons and olive stock, although ornamentals will also be grown.

Judge Leib of Santa Clara county shipped a carload of Franquette walnuts from his ranch last week. The nuts were packed in 10-pound boxes.

About 45 tons of nuts were shipped from Hemet this year, and it is estimated that $12,000 will be received by the growers. Due to the added acreage which has been planted in recent years, it is believed that the output will be doubled in the next two or three years.

A bill is in preparation by the Farmers' Union and the Pomona Grange of Santa Clara county to be presented at the next meeting of the Legislature, which will provide for a State Experimental Station for deciduous fruits. It is claimed that large sums are being spent by the State for such stations in the southern part of the State for citrus experiments, but that none are available for deciduous fruit culture.

The first attempt to market walnuts in small cartons is being made this year by walnut growers in the vicinity of Goleta, Santa Barbara county. The packing of 15,000 three-pound packages was started last week and a carload will be shipped this week to the East for the holiday trade. As soon as the shipment arrives in the East a newspaper advertising campaign will be started, and it is thought that in a few years practically all of the walnut crop will be sold in this manner.

VEGETABLE NOTES.

Between 8,000 and 10,000 sacks of beans have been grown in Sutter county this season, most of which were whites. Prices are reported as being $3,50 a hundred for whites,

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IT WILL PAY you to let me figure with you on large or small plantings of Apples, Pears, Apricots, Prunes, Peaches, Strawberries, Logans, Blacks, Currants, Gooseberries, etc. Send list of requirements. To secure mailing lists, 12 deciduous fruit trees for $2.50—your selection. 100 Strawberries for $1.00. All prepaid. H. A. Hyde, Nurseryman, Watsonville, Cal.

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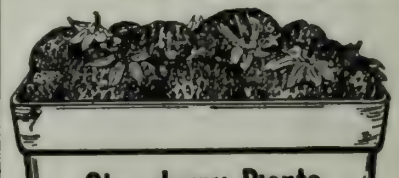

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One gallon size 20c
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No Spike Roots.
Almonds on Almond & Peach root.
All Varieties of Fruit Trees for sale.
Write for Special Prices.

Land for sale in large and small tracts on small terms. We plant and care for orchards and guarantee a stand of 95%.

Plenty of water.

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P. O. Box Newcastle, Cal.

and $4.50 a hundred for kidney beans.

J. O. McBurney of Oakdale, Stanislaus county, is authority for the statement that beans will do as well in that section as in Southern California, and with that belief in mind will plant 200 acres of land to beans next year.

On the advice of Government experts, potato growers in the vicinity of Stockton are preparing to flood their land for two weeks this year. This is being done to overcome "jelly ends" which have affected the potatoes there somewhat the past season. It will also drown out other germs and weeds.

POULTRY NOTES.

During the month of October 4500 dozen eggs were shipped by the Tulare Co-operative Poultry Association. The total business for the month amounted to $4,000, of which $2,000 was paid out for eggs and $1,000 for poultry.

It is expected by members of the Porterville Poultry and Pet Stock Association that their show, to be held at Porterville December 15, 16, and 17, will be larger and better in every way than the one held last year. Lacy Threlkeld is secretary of the association.

H. W. Kruckeberg of Los Angeles was a visitor at this office this week while on his way home from the annual meeting of the California branch of the American Poultry Association, of which he is the secretary. The meeting was held in connection with the Petaluma Poultry Show last week.

GRAPES AND RAISINS.

Over 500 cars of table grapes have been shipped from Sanger this year, and there are still many cars to be shipped.

Notice has been received that the Associated Raisin Company has sold 33,000 tons of raisins during the month of October. This is a record-breaker, and is attributed to the fact that buyers are confident that they will not lose money on account of a lowering of the price later on.

HIGH SCHOOL FLOWER SHOW

The Turlock Union High School, in which there is a good class in agriculture and a boys' agricultural club, recently held a two-day flower show which was especially successful and awakened more interest in floriculture, according to B. E. Porter, who has charge of the work. There were about a hundred exhibitors, including many of the mothers, but mostly students. Isn't this about the best way in the world to tie the daughter's affections to the home and give her outdoor exercise at the came time?

The annual statistical report of the California State Board of Agriculture for the year 1913 has just been issued. Incorporated in this year's book is additional data on vacant public lands, beet sugar, cotton, rice, tobacco, ginseng, leading counties in production of farm crops, leading counties in production of fruits, tariff changes in 1909 and 1913, and information on dates. The book is full of valuable statistics, and may be had by addressing the office of the State Statistician, Box 1176, Sacramento, California.

Little three-year-old Bessie was trying to dress herself one morning and managed to get her clothes badly mixed. Calling to her mother, she said, "O mamma, come and help me: I'm all upside out!"

TREES

Grown on Russian River Sandy Loam soil without irrigation are best for several reasons. Our prices are right We ship subject to approval. Write for price list.

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Scale on Trees, Shrubs and Bushes
also
The Red Spider and other Insects, Worms and Bugs
Does Not Hurt the Plant or Tree
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Special prices by the barrel.
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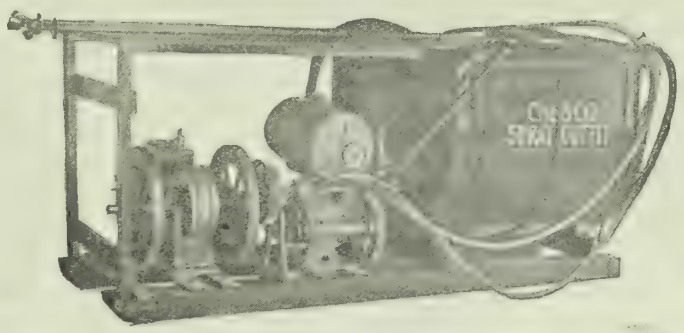

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The entire outfit mounted on channel iron frame, so that it can be put on running gear or on ordinary farm wagon. No enclosed machinery. Ready access to pump and engine.

A Complete set of canvas curtains furnished with the outfit.

The engine is complete in itself for pumping or other farm work, and can be taken off the channel iron foundation by merely removing four bolts.

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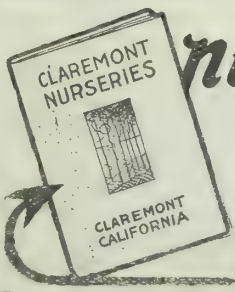

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We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

GYPSUM LAND PLASTER

Gypsum neutralizes alkali; Cures Gum disease, root rot, variegated leaf; mellows gumbo soils; binds sandy soils.

WRITE FOR BOOKLET "LIMING OF SOILS"

CONSOLIDATED PACIFIC CEMENT PLASTER CO.
611 San Fernando Bldg., Los Angeles, Calif.

Pure-Bred, Range-Bred Beef.

[Written for PACIFIC RURAL PRESS.]

Imagine, if you can, a cattle and sheep ranch comprising 23,000 acres of rich overflow land, adjacent to the Sacramento river, a range 30 miles distant in the mountains back of Winters, Yolo county, and a home ranch half way between the two, where most of 600 acres will eventually be one solid mass of green alfalfa; and you have some idea of the magnitude and the quality of the home of the Hillcrest herd of shorthorn cattle owned by T. S. Glide.

Mind you we said "some idea," for it would be absurd to think that this great ranch could be summarized in one paragraph, as there are a thousand and one things about the place that are contributory to its success which even the observant visitor does not always perceive.

As acreage goes here in California, the Glide ranch is not excessive when compared with some holdings, but its natural location and adaptability for stock raising are such that it has few peers in the State for the purposes for which it has been and will perhaps be used for, for a great many years to come.

Then too there was need of a home place, where the show herd of cattle could be cared for as well as the flocks of registered Shropshire and Merino sheep; also the range bulls and rams that were to be sold the following spring could secure added growth in the short interval between changing from the tule to mountain range in the fall, by feeding them liberal amounts of silage and alfalfa hay.

To provide this, the present home ranch of 600 acres was purchased, being located near Davis in Yolo county, and about midway between mountain and river lands.

It is at this ranch that one comes nearest to seeing the progressive spirit that has had so much to do with past successes in the Glide family. It is here that barren stubble fields, with no irrigation facilities have gone through a transformation till now the visitor finds large fields of growing alfalfa, irrigated either by electric power or gravity water, according to the seasonal cost. Many more fields are checked and ready for further seeding of alfalfa and large fields of Indian corn which by the time this

Grand Champion Shorthorn, California State Fair 1914. Glide champions do range service after winning their laurels.

The reason for this conclusion is that the growing season on both the low land and the mountain range is so largely dependent upon floods and drouth that to think of more intensified cultivation is out of the question.

Summer and Winter Range.—And it is for this reason that both locations are needed for breeding cattle and sheep, the low lands providing feed during the summer and fall months, up to the time of the beginning of the winter rains, at which time the mountain lands begin to produce abundant feed for the balance of the winter, when the low lands are covered with overflow water from the Sacramento river.

Both the winter and summer ranges have been Glide possessions for a great many years, but until four years ago there was no conecting link between the two places which would allow easy access from the ranch home to either range.

At that time T. S. Glide took over the management of the ranch and soon found that it was no easy task personally to superintendent a proposition where the interests were so widely separated by distance.

Show Herd at Home Ranch.—is written will have been cut and put through the new concrete silo, and will later be put through the purebred sheep and cattle.

The everlasting hobby of Mr. Glide is that nothing be sold from his ranches except what walks off, and it is upon this basis that he and his people have benefited rather than robbed their land possessions.

In this regard there has been a noticeable increase in the fertility of what is called the home ranch, during the past four years due entirely to the good job of manure spreading which the cattle and sheep have accomplished in that time.

With the intention of making this a home place worthy of the name in every sense of the word, a family orchard has been planted and good barns, men's quarters and a fine residence have been erected. The barns have been constructed to house the show stock; and with the exception of modern lambing barns on the tules, there is very little money invested in buildings, away from the home ranch.

All through the history of the ranch, which we have in part described, one finds the cattle of al-

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Geo. A. Smith's 5th Sale of Registered Stock

CORCORAN, CAL. SATURDAY, DEC. 12, 1914

85 REGISTERED HOLSTEINS

NOT A CULL IN THE LOT

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COWS—HEIFERS, Fresh and Coming Fresh. YEARLINGS and HEIFER CALVES that will Double in Value within a year. Richly bred, high quality BULLS that are fit to head any herd. Cows and Heifers bred to a son of the WORLD'S RECORD DAUGHTER of the famous King Segis.

YOUR LAST OPPORTUNITY this year to secure some of the BEST BLOOD the breed affords at Bidder's Prices.

PROVEN PRODUCERS. Cows with A. R. O. Records. Cows now on Year's Test.

RELIABLE BREEDERS. You will see splendid groups of Cows with their Sons, Daughters, Grandsons and Granddaughters. GREAT SEED FOR FOUNDATION HERDS.

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Many of the HOLSTEINS that I SOLD in my June Sale have been RESOLD AT DOUBLE THE PRICES I SOLD THEM FOR.

You Start at the Top when You Buy This Kind.

The Holsteins in This Sale have been sired by 28 different sires, Each One a GOOD ONE. There are Grandsons and Granddaughters of King Segis, Hengerveld De Kol, Sarcastic Lad, De Kol 2d Butter Boy 3rd, Contest Colantha Champion, Pontiac Hengerveld Parthenea, Johanna Colantha Lad, Duchess Ormsby Piebe Burke, Jessie Maida Paul De Kol Burke and many other sires famous in Holstein history. Families that have been bred for generations for GREAT MILK and BUTTER PRODUCTION. Get some of this GOOD SEED and make your herd famous.

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Warm the bath room

with the glowing heat of the

PERFECTION OIL HEATER

Mother and children need it for the bath—father for his morning shave.

Dealers everywhere

Write for booklet, "Warmth in Cold Corners."

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for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

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most equal importance to the land, for it is, after all, the cattle and sheep which have made the ranch's name familiar to almost every stock-growing Californian.

There is a good reason for this and that reason is "quality of stock handled" and the benefits of this quality have been of inestimable value not to the Glides only but to the State or adjoining States as well. From here the highly bred bulls have gone out on to the ranges to establish higher ideals in the minds of cattlemen generally and make for higher efficiency in the cattle business for all future generations.

Beginnings of Pure Bred Herd.—The establishing of a herd of purebred cattle on this ranch was begun in the 70's through the purchase by J. H. Glide Sr., of a few registered females. From that time until 1893, the herd was gradually increased and all animals registered. At that time however, as most will remember, financial conditions all over the country were bad, and this more than anything else decided the senior Glide to do away with extra expense incurred in registering and caring for the stock, the result being that most of the herd was turned on to the ranges.

There were about 500 of these purebred animals, and it is from that foundation that all of the cattle now on the ranch have been raised, giving the ranch the distinction of having purebred cattle entirely, but not registered cattle exclusively, although T. S. Glide reserved a few of the best individuals for a foundation herd of registered animals and has at the present time between 30 and 40 head of such females.

Sires from Show Herd.—Maintaining a herd of registered beef cattle is in itself an expensive undertaking, especially if one keeps up a show herd, as has been a Glide practice for many years. But in this case the profit and loss account from the show herd is thrown back onto the range herd in such a manner that it is really the life of the whole breeding system.

In the first place those 500 cows that were turned onto the range so many years ago, needed new and better blood bred into them, if their offspring was to continue to carry both the ruggedness and breeding quality demanded by the buyer. So we find that the chief purpose of that fine show herd which we have yearly seen at the California State Fair, is after all utility, as it is from this herd largely that the range sires are chosen.

Sires from East.—Not all of the range sires are secured from the show herd though, for while in the East purchasing sires for the registered herd when required, a carload of bulls is also purchased for the range cattle and in this way new blood is continually incorporated in both the show herd and the range herd.

In choosing these sires Mr. Glide attaches most importance to the conformation of the individual and is a firm believer in the practice of buying your bull and looking at his pedigree afterward.

In this respect it is interesting to know that there has been only one instance when a Glide bull did not take grand championship at the State Fair since 1904 and that year only young stock was shown. Excepting two of these animals, they were all of Glide breeding. It is further interesting to know that each one of these bulls was bred to the range cows after winning his ribbons, instead of being kept up and further pampered to add more laurels to the herd's name.

Range Breeding for Sires.—But why, you may ask, attach so much importance to that range herd when there is a nicely fitted show herd to talk about. The answer to this as any experienced range man knows, is that while the breeding imparts better bone, and frame, it is the bull that has been bred and reared under the same conditions that he will later have to exist under, who is most valuable for range breeding.

It is therefore necessary to the success of the breeding business on this ranch that the bulls sold for breeding purposes, be bred and raised on the range lands for the rugged constitution that they will later need.

The value of this system was demonstrated in a bunch of young bulls just off the range.

Rough looking and not nearly so pleasing to the eye as the show herd, it is true, but bone size, and constitution were so noticeable that one could not but admire their range breeding qualities.

These fellows had been dropped on the tules, during October and November, 1913, while the feed there was good. From there they were taken during the winter months with their mothers to the mountain range, and returned to the tules after the flood season this year.

In October of this year they were being fed a ration of silage and alfalfa hay in liberal quantities to promote size. They will again go onto the mountain range for wintering, and at about 18 months of age will be shipped to their future owners for breeding purposes. By breeding in January, the bulls are ready for service at an earlier age than when summer breeding is practiced and at the same time are ready for delivery in the spring when buyers require them.

It will be seen that for six months previous to their shipment they are, strictly speaking, range cattle and that, connected with the breeding which we have before mentioned, is the great value of the land itself as it allows a practical system of western beef cattle breeding.

Only casual mention has been made of the sheep on this ranch, as that is another story and will be treated as such, for they too have done much toward the ultimate success of the Hillcrest Stock Ranch.

Cattlemen who have had their stock on the El Dorado national forest preserve, have been busy during the past few weeks in getting their stock down onto the lower ranges. The cattle coming from this point are said to be in good condition and many of them have been shipped direct to the market while others will be held over on the lower ranges during the winter.

Kill the runts when born. They are created to eat but not to grow.

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with

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THE BEST ENGINE
THE BEST DUPLEX PUMP
THE BEST TANK
THE BEST AGITATOR
THE BEST SPRAY NOZZLE FIXTURES

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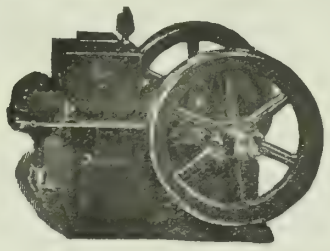

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Everything for the Dairy

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We expect a large shipment of Horses in the next thirty days.

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Tilly Alcatra has just completed a yearly official test with a record of 30,452 pounds milk, a world's record that is likely to stand for some time to come.

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We can furnish you fine young bulls sired by Prince Alcatra (Grandsons of Tilly Alcatra) and out of registered and high-testing dams.

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"The name Gibson insures Quality."

With the Livestock Men

Among those who are doing some semi-official testing in Kings county is Royal Waltz, owner of the Royal Jersey Farm near Hanford.

State Dairy Inspector Smith made two arrests while in western Yolo county last week, he having found sanitary conditions very bad on the owner's dairies.

The Farm Bureau of Napa county held a meeting last week for the purpose of forming a cow testing association. Before the meeting closed 800 cows had been pledged.

Blevine Brothers of Williams recently sold a team of draft horses to McNab and Smith of San Francisco for $1100. Such prices should be conclusive proof that good draft horses find a ready market and are profitable to breeders.

Hayes and Devaney received a shipment of 1042 head of Mexican cattle last week at Lathrop. This stock will be wintered on the Wasn Trehan place. The same firm expect to fatten about 300 head of choice stuff on alfalfa hay this winter.

W A. Young, the well known Poland China breeder of Lodi, has just received a shipment of six registered sows from the east, with which he will further add to his already large herd. A large barn is being built in which the stock will be housed.

Over $81,000 was paid out by creameries in Tulare county for cream received during the month of October. This was $3,000 more than was paid out for September cream, prices ranging from 33 to 37 cents a pound for the month.

The quarantine placed on cattle has stopped the shipment of a carload of registered Holsteins which T. J. Gilkerson of Kings county has ordered from eastern breeders. Mr. Gilkerson has disposed of all of his grade cows and from now on does not expect to handle anything but purebreds.

Two auction sales of mules and horses have recently been held in eastern Stanislaus county. Prices ranged as follows: Mule weanlings averaged $66, yearlings ran from $65 to $90 and two year olds sold up to $125. Mares and horses ran from $140 to $150.

J. C. Anderson, of Los Angeles county has recently purchased four choice Berkshires from the Oak Grove Dairy Farm at Woodland and six Poland China sows from W. H. Browning of Woodland with which to start purebred herds in the southern part of the State.

In order to protect stockmen, the Portland Union Stock Yards has started to disinfect their entire yards. They have sent out a statement to the effect that there is nothing to indicate that the yards will have to be closed on account of the foot-and-mouth disease which has caused so much apprehension in the east.

M. Dabner and son of Napa are just completing one of the finest dairy plants in the north of the bay section. They have built a modern dairy barn milk house and horse barn and expect to erect a silo. The ranch is located a short distance out of Napa and it is intended to sell whole milk in the city of Napa.

Word has just reached this office from Malcolm H. Gardner, superintendent of Advanced Registry of the Holstein-Friesian association, that the cow Duchess Hengerveld Korndyke 131752, has broken the record for fat production in the senior three year old class, by producing 22,897 pounds of milk, containing 903.38 pounds of fat.

Complaint has reached this office that certain breeders are not living up to their promises in their dealings with the public. Such practices are poor policy as it hurts the industry as well as the breeder, tending to discourage the purchasing of better bred animals. A breeder's reputation should be of more value to him than the few paltry dollars he gets from crooked dealing.

In a feeding test made near El Centro, Imperial county, recently. M. C. Moody found a large increase of milk flow and butterfat content while feeding alfalfa hay and spineless cactus over that received while feeding alfalfa hay and cotton seed.

Creameries of Kings county paid their patrons $155,000 for cream received during the month of October. An advance of three cents a pound over prices paid during September prevailed.

Notwithstanding the quarantine placed on horses in eastern States, the demand for European trade continue unabated and several hundred head were purchased last week for foreign countries. Only animals of a very decent sort are being accepted.

The Southern Pacific has recently inaugurated a livestock special train which will be run once a week between Klamath Falls and San Francisco. The first of these trains arrived in Oakland last week in a trifle over 24 hours, carrying 35 carloads of cattle.

There was a more encouraging outlook for cattle at the Portland Union Stock Yards last week, top steers reaching $7.50, very few selling below $7.00. Good grade cows occasionally brought as high as $6.25. Hogs continued to arrive in good quantity and prices remained strong, tops advancing from $7.40 to $7.55 on Friday. Prices were higher than at some of the eastern markets. Continued short receipts and strong prices characterized the week's sheep market. Lambs sold as high as $6.50, ewes $4.55, and all other lines on the same price level.

While making this office a visit last week, J. S. Gibson of Williams stated that he has been doing considerable official testing the past year and that all of the cows tested have been entered in the advanced register of the Holstein-Friesian association. This work is to be continued from now on and every effort made to develop the herd to the highest point. All of these cows will be bred to the herd sire Prince Alcartra Korndyke, the only son of the world's record cow, Tilly Alcartra, being used on a purebred herd, the off-spring should place the Gibson herd in an envious position among black and white breeders.

To the Editor: When should rutabagas for stock be planted?—A. R. T., Ukiah.

[When you go back East. They do not grow or keep nearly so well in California as mangels, and are not more valuable for food. The dry heat of the California summer distresses them, they do not make a reenlargement for winter feeding as beets do, the yield is less, and they are more trouble to harvest. Beets may be sown any time now, but December planting would be a bit cold and wet for the seedlings to get started, unless unexpectedly warm. February or March sowing will give you beets for summer use. These remarks are true of rutabagas in your county. —Editor.]

CORRECTION.

Stock distillate emulsion as described on page 469, issue of Nov. 14, is made with 30 pounds (not gallons) of whale oil soap per 12 gallons of water.

In "Green Oranges to the Country," issue Nov. 21, "Green oranges make a good 'gamble'" instead of "example."

Also, "Fertilizer 'Boxing'" should be "Fertilizer Buying."

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MISCELLANEOUS

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

Dairying on a Large Scale.

[Written for the PACIFIC RURAL PRESS.]

Dairying unlike most other industries, has seldom been so successfully acomplished in a large way as it has in a smaller way, due chiefly to the fact that no other business requires quite so much personal supervision by the owner. In this repect the smaller dairymen have a big advantage over the owner who tries to carry such a heavy load on his shoulders.

For these reasons, if for no other, it is interesting to know how one of the largest dairies in the State is managed, and that too at a profit to the owners.

The dairy in mind is the one belonging to Heath brothers at Pleasanton, or perhaps it would be more accurate to say the dairies owned by that company in Alameda county, as they now have three different establishments, either of which is much larger than the ordinary dairy. The combined production of all of them is 1550 gallons daily from 660 cows.

Two of these ranches are located near Pleasanton and the other one at Mowry station, near Newark. At the first two places there are 520 acres of alfalfa, 300 of which have been planted during the past year, while at the latter there are 130 acres of alfalfa. Besides this there are nearly 2500 acres of pasture land, a part of which is situated in the hills near Pleasanton while a good deal of it is located on the lower lands near Mowry Station. The pasture lands are used for carrying the dry stock and young stock, while the alfalfa fields are depended upon for hay exclusively, no pasturing being permitted on them. A great deal of the alfalfa is, however, cut green and fed in that form and Mr. Heath states that he can carry at least one third more stock in this manner than if the hay were cured in the field and fed dry.

To balance the alfalfa ration, concentrates are added in the following proportions, one third beet pulp, one third alfalfa meal and molasses, and one third rolled barley and oil cake meal equal parts.

Both the green alfalfa and concentrates are fed inside the milking barn, cement mangers having been built for that purpose.

The barn at the main dairy near Pleasanton is built in several units, each unit being long enough to accommodate four 30-cow strings. Gable type roofs with ventilating facilities afford the covering. The cows enter directly from the corrals at one end of the building, while at the other end, a door opens on a space about 12 feet wide, the entire length of the building, which has been left open for handling hay and other feeds.

The milk is carried from the barn directly to the milk house where it is poured from the outside over a large milk cooler, which is cooled with brine from the ice machine to a temperature of 40 degrees. From the cooler it is run off into 10 gallon cans, in which it is shipped to the bay cities. The larger part of it after arriving there is pasteurized, bottled, and retailed by Messrs. Heath, who have their own distributing organization in Berkeley.

Although 660 cows are milked, the company own some 1100 head altogether, it being necessary to have a certain number milking all of the time, as is the case with all whole milk propositions. An interesting thing about the system used in securing good cows for such a large dairy is the fact that they raise all of their heifers, thus upsetting the traditional belief among market milk men that they cannot afford to feed milk to calves when it normally sells for 17 or 18 cents a gallon.

In doing this however it has been realized that it is not profitable to feed calves from scrub bulls and for that reason, registered Guernsey and Holstein bulls are in use on both of the Pleasanton ranches. The young bull calves have been sold the past year to stock men in that vicinity, who turn them onto the ranges, but usually they are sold to the butcher for veal. The heifers however are kept on the ranch and fed whole milk and calf food. Mr. Heath states that he can in this way secure better bred animals at a lower price than he can secure them in any other way, especially now that cows are so high priced.

All of the cows in the herd are tested once a year for tuberculosis with the aim of gradually culling out all reactors, it being the belief of the owners that money spent in this way is a big safeguard for the future welfare of their business.

While Messrs. Heath have been in their present location a number of years and have made the business pay good revenues, their chief reason for continuing on such a large scale is the fact that they are unable to get a satisfactory supply of milk for their city trade in any other way. This accounts for their having entered the dairy business in the first place, as they were distributors of milk a good many years before they started producing.

Feeding beef animals in muddy lots is a losing game. Locate the feeding lots on a sandy knoll or hillside, or else rock the corrals well. A steer will lose more weight in a week when standing up to his belly in mud than he can gain back in two weeks.

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Woodland, Cal.

The Next Holstein Sale.

[Written for the PACIFIC RURAL PRESS. by Wm. D. Guthrie.]

A few days ago the writer had the privilege of spending a few pleasant hours, inspecting the animals that are being offered by Geo. A. Smith in his sale of registered Holsteins, to be held December 12, at his ranch near Corcoran, Kings county. This is Mr. Smith's second Holstein sale, the first being held last spring. The cows that are being offered are broad, deep bodied, well marked animals. They have the type, conformation, and quality of the breed's great producers, whose blood they carry, being grandsons and granddaughters of such animals as King Segis, who, although he lived only six years, has 86 A. R. O. daughters, seven of which made over 30 pounds of butter in 7 days, and has 66 sons that were sires of tested daughters. He was also the first Holstein to sell for $10,000.

Hengerveld De Kol is another of the grandsires. He has 116 A. R. O. daughters (nine over 30 pounds). He is half-brother to De Kol Burke, who has 32 A. R. O. daughters, including Sadie De Kol Burke, world's champion milk cow, who made 920 pounds of milk in 7 days and 54,807 pounds in two years. Still another is Sarcastic Lad, champion bull at the St. Louis Exposition, sire of 32 A. R. O. daughters, and sire of three world's record heifers, including Dutchland Colantha Vale, world champion junior 2 year-old, record 758.5 pounds of butter and 22,750 pounds of milk in one year. Dutchland Colantha Lad, former world's champion 3 year-old, record 946.71 pounds of butter and 21,239 pounds of milk in one year, and Dutchland Colantha Mono, world's record heifer, who produced 22,645 pounds of milk in one year. His son, Colantha Johanna Lad, has 80 A. R. O. daughters and his owner recently refused $30,000 for him. De Kol 2nd Butter-boy 3rd is another of the grandsires, he having 116 A. R. O. daughters, 4 granddaughters with records of over 1,000 pounds in one year, one of which was Bandastine Belle De Kol, world's champion butter cow, record 1322.9 pounds of butter and 22,404 pounds of milk in one year. Another one, Highland Hartog De Kol, produced 1,247.9 pounds of butter and 25,592 pounds of milk in one year, and is the only cow in the world of any breed to have a 1,200 pounds butter record.

Contest Colantha champion, who has for his dam one of the most wonderful cows in the world. She made at first freshening, a world's record for both milk and butter for heifers under 24 months of age. Then, without going dry, she broke the world's record for 1, 7, and 30 days in senior 2 year-old class, being the youngest cow in the world to produce 100 pounds of milk in one day and again as a senior 3 year-old broke the world's record, standing today as the only cow of the breed making world's records for three consecutive years, each record still standing at the head of its division.

Most of the cows offered have A. R. O. records, many of them being made by Mr. Smith on ordinary alfalfa pasture, supplemented with rolled barley, feed such as every dairyman has. One of the cows made on this ration 18 pounds of butter in seven days, a splendid record considering the feed used.

The cows that have freshened since coming to the ranch are in calf to either of the following bulls: Segis Oak Homestead Fakes, a grandson of the great King Segis, whose dam has a record as a 4 year-old of 22.94 pounds of butter in 7 days, and whose two great granddams have records averaging 26.85 pounds of butter in 7 days, and his 7 nearest dams 27.06 pounds. He has one two year-old daughter that recently made, on ordinary feed, 12.94 pounds of butter in 7 days, on official test; or Prince Beauty Pietertje Segis, son of Belle Segis, world's record daughter of King Segis. She made 31.81 pounds of butter in 7 days and 124.28 pounds in 30 days. He has six half sisters that have records of over 30 pounds of butter in 7 days. His sire's dam has a record of 32.52 pounds of butter in 7 days. These bulls are good individuals and get good, strong, straight, big bodied calves; calves that if given the opportunity will make a name for their purchasers in either the show ring or by way of the milk pail.

Few such opportunities are offered the man who wants only two or three cows. In order to secure other animals of like breeding it is necessary to go east for them and such a trip is expensive. Some loss is always experienced in shipping such a distance. Every one interested in better stock should make it a point to attend, if for no other reason than to get acquainted with pure bred stock.

A $500 BULL CALF.

Edith Mandel De Kol, for whom W. H. Ginn and son paid $950 at the recent breeders' consignment sale at Hanford, is now the mother of a bull calf for which $500 has been refused.

The sire of this promising youngster is Lorena Korndyke, grand champion at the California State fair for the past two years, and his dam is out of a 30 pound cow. As a three-year-old she made 17.5 pounds of butter in seven days and a little better than 770 pounds in one year. This young bull will be kept at the Ginn ranch to head the herd of registered Holsteins that is being rapidly built up.

Due to the foot and mouth outbreak in the East, the directors of the International Live Stock Exposition at Chicago and the Kansas City Royal have decided to abandon this year's show, as it was not considered probable that traffic restrictions now in force would be removed in time for the exhibition.

According to reports from Fallon, Nevada, the demand for dairy cows there is good at the present time, the manager of the Churchill creamery having just left for outside points in search of 300 cows. This concern is turning off a carload of hogs as a side line every month and now have about 900 head of such stock in their finishing pens.

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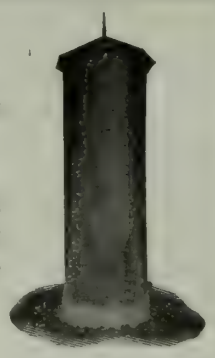
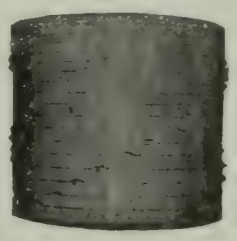


This is a Photo of the 12x36 Redwood Stave Silo manufactured and erected by us on University of California Experimental Farm, Davis.



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From 500 to 500,000 Gallons Capacity. Built to Suit All Uses and Users. Cheaper than Metal Tanks, Last 10 Times as Long.

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Hillcrest Stock Farm

DAVIS, CAL. T. S. GLIDE, Prop.

Breeder of Shorthorn Cattle, French Merino and Shropshire Sheep.

At 1914 State Fair our Shorthorns took first prize in every class we entered except two, and in these were beaten only by stock of our blood. We took all the herd prizes, first and second prizes in produce of cow and first in get of sire.

KING LANCASTER, 3 times Grand Champion

Below is a list of our Grand Champion bulls for the last eleven years—a list that will stand for quite awhile:

1904—Hillcrest Hero
1905-1906—King Edward (Also Grand Champion World's Fair at Portland.)
1908—King of Greenwood
1909, 1910, 1911—King Lancaster
1912—Greenwood Knight
1913—Greenwood Knight
1914—Greenwood King

All except the first two of the list were bred by us. We have beaten a number of bulls that were bought in the East at prices ranging from $500 to $3000 and brought out here to beat us. Range raised young bulls for sale, single or carload lots.

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Another Victory for the Shires

At the State Fair just closed, the Shire Stallion SEVERN PILOT, imported by the Salvador Stock Farm, won the Stallion Registration Board's trophy and $100 for the best draft stallion of any breed to be shown with three of his get.

If you want to raise draft horses, get a Shire stallion

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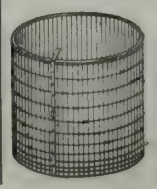

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Water troughs, tank frames and towers.

Steel and Wood Windmills. Prices the lowest.

BROWN & DYSON

640 So. Center St., Stockton, Cal.

Veterinary Queries and Replies

[Answered by Dr. Robt. Boyd, San Francisco Veterinary College.]

WARTS ON TEATS.

To the Editor: How can I remove warts from a cow's teats?—G. T. D., Chino.

[Give the cow twice daily, in feed, two drachms of Fowler's solution of arsenic. Increase gradually about half a drachm every two days till cow is receiving one ounce daily for two or three days. Then gradually decrease again till you are giving two drachms per day for two days and stop the drug. When administering the drug be careful to watch for a swollen condition of the eyelids or an apparent soreness of the eyes, or any signs of indigestion, such as diarrhoea. If these signs appear gradually reduce the amount of drug as mentioned above. At the same time as this treatment is being given, paint the warts daily with Fowler's solution, being careful to wash off before milking or allowing a calf to suck. If this treatment is followed faithfully you will find it successful.]

BULL CALF ALL RIGHT.

To the Editor: I have a registered bull calf, six weeks old that had an irritation at the end of its navel when it was a week old. It has now a lump two inches long and about one and a half inches thick. It eats and drinks well and there seems nothing the matter with its urine. Can I do anything for it?—E. S., Turlock.

[This will in all probability disappear with age. It will not affect the animal for breeding purposes.]

HEIFER NEEDS EXAMINATION.

To the Editor: I have a heifer calf four months old, which has a hard lump under its tongue, visible below its jaw and about the size of an egg. I noticed it several months ago at which time it was not so hard and I thought it would disappear. I applied strong liniment to blister. Kindly suggest treatment.—T. H. Escalon.

[It would be impossible to say definitely just what this is without an examination. It is possibly actinomycosis (lumpy jaw), but as you say the calf is only four months old and you noticed it several months ago this is unlikely. If the animal is a valuable one I would suggest that you call in a reliable veterinarian.]

TREATMENT FOR SWEENEY.

To the Editor: I have a horse that has a sweeneyed shoulder. Can you suggest treatment for same?—D. R. P., Richfield.

[The best treatment in the case of sweeney is repeated mild blisters. Try the following blisters: Powdered cantharides 4 drachms, lard 2 ounces. Rub well into shoulder for 20 minutes to half an hour. After 48 hours grease well with lard and wash off with soap and warm water. Re-apply in four weeks time. If you care to do so daily very good results can be gotten from rubbing with a good stimulating liniment into affected parts for about half an hour to three-quarters of an hour. This, however, takes time and a considerable amount of labor to get results.]

SICK DOG.

To the Editor: Our bull pup has recently developed a growth under his lower right jaw. The lump three days ago was no larger than a small pullet's egg. It is movable and does not seem to pain when touched. He has eaten well until today when he left part of his mid-day meal. The growth is developing so rapidly that we would like your advice on the matter.—W. D. S., Sonoma.

[This may be an abscess or may be an enlargement of one of the submaxillary glands. I would advise bathing and rubbing in a mild liniment such as the following: tincture arnica 1 ounce, spirits camphor 1 ounce, soft soap ½ ounce, stronger ammonia water ½ drachm, water to 8 ounces. When the abscess points it would require to be lanced and syringed out twice daily with a mild antiseptic, such as a saturated solution of boric acid. Pay attention to the animal's diet and feed only twice daily.]

LEAKY TEAT.

To the Editor: I have a cow that has been fresh about nine months. after she freshened she lost a great deal of her milk by dripping every day. After she had been fresh about six months she would have spells of giving stringy, slightly salty milk. Now she will be fresh in about two months and is almost dry, but we keep milking her twice a day for fear of drying her too soon. After washing the milk bucket the dish rag is slimy. Is there any cure for this and if so should a person do anything before she freshens?—L. T., Ontario.

[The loss of milk is due to a relaxed condition of the sphincter of the teat, probably due to nerve paralysis. The stringiness of the milk is due to contamination of the milk after being drawn from the cow by the bacillus visculosis. The normal habitat of this bacillus is water and the milk was in all probability contaminated in the pail. The taste you speak of may have been due either to bacterial infection or to something the cow has eaten. The only way to determine this is to taste the milk directly after milking. If bitter then it is from something that the animal has eaten, but if upon standing it becomes bitter it is due to bacterial infection. I would advise you to scald your milk pails thoroughly after washing and not apply a dish cloth after the scalding. There is no danger of drying the cow too soon if she is going dry.]

Dairy cows do better on alfalfa hay that has been cut and cured at the proper time. Hay cut just before blossoming time is seldom woody, and always retains the leaves after curing, which is the most nutritious part of the plant.

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55 New Montgomery Street
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FOR SALE
By Owner
A Fine Belgian Stallion

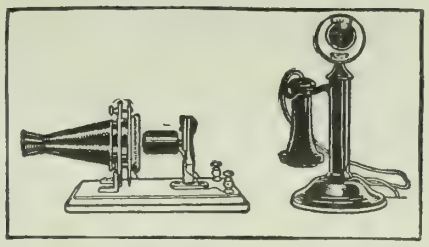
4 years old, sound and alright every way. I carried away two prizes with him at the California State Fair this season.

I will sell this horse cheap if sold soon. For further particulars write me or come and see the horse.

Watson's Feed and Livery Stables
PATTERSON, CAL.

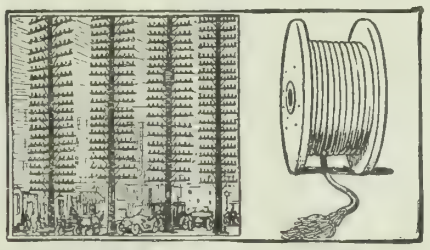
How the Public Profits By Telephone Improvements

Here is a big fact in the telephone progress of this country:



Original Bell Telephone 1876 — Standard Bell Telephone To-day

Early Telephone Exchange — Typical Present-day Exchange



If City Wires Were Carried Overhead — 80C in Underground Cable

Hand in hand with inventions and developments which have improved the service many fold have come operating economies that have greatly cut its cost.

To appreciate these betterments and their resulting economies, consider a few examples:

Your present telephone instrument had seventy-two ancestors; it is better and cheaper than any of them.

Time was when a switchboard required a room full of boys to handle the calls of a few hundred subscribers. Today, two or three girls will serve a greater number without confusion and very much more promptly.

A three-inch underground cable now carries as many as eight hundred wires. If strung in the old way, these would require four sets of poles, each with twenty cross arms—a congestion utterly prohibitive in city streets.

These are some of the familiar improvements. They have saved tens of millions of dollars.

But those which have had the most radical effect, resulting in the largest economies and putting the telephone within everyone's reach, are too technical to describe here. And their value can no more be estimated than can the value of the invention of the automobile.

This progress in economy, as well as in service, has given the United States the Bell System with about ten times as many telephones, proportionate to the population, as in all Europe.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

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The Line of

SERVICE
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On your next trip consider the advantages offered by this route.

THROUGH THE FEATHER RIVER CANYON AND THE ROYAL GORGE, WHERE BEAUTY OF SCENERY IS COMBINED WITH EXCELLENCE OF SERVICE AND EQUIPMENT ON TRAINS OF HOMELIKE COMFORT

TICKET OFFICES:
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1326 Broadway, Oakland, Phone Oakland 132

Poultry for Profit

HINTS TO GEESE AND DUCK BREEDERS.

[Written for PACIFIC RURAL PRESS]
By Susan Swaysgood, Pomona.]

Yesterday I saw in a local paper an ad. of young goslings to sell, and I decided that it was time to remind all those that intend raising geese and ducks next season that it is time to be getting their stock in shape. This man has taken time by the forelock and if those that buy can keep them warm they will have green goose to sell in early spring when they will net a good price. The young goslings will cost little or nothing to raise if there is a good pasture, and will be almost all clear profit. Still this is a little early, or late, just as you like, but the only thing that will hurt them is getting chilled. Goslings stand cold better than heat after ten days old, but they do require a warm bed at night. But we are going to talk about the breeders because that is the main thing in getting young stock to raise. If the old ducks and geese have been on range, they should now be fed a good mash twice a day. Beginning with five per cent of animal food in the mash, increase the quantity of beef scrap until you are feeding at least ten per cent, and also increase the corn meal. Any good poultry mash will answer for ducks and geese by adding a little more beef scrap to it.

Don't increase too fast, however, just a little at a time and heft the ducks at least once a week to see if they are getting too fat. They must not get too fat before commencing to lay, and after they do commence they will not be likely to fatten, as laying ducks and geese can use quite a bit of strong food during the laying period.

Mating Geese.—Geese are best mated with one gander to two geese and if they are two years old so much the better. During the breeding season, water for mating is an absolute necessity or there will be no fertile eggs. A wash tub sunk in the ground or a cement trough, wooden tub or anything will do that is large enough for them to get in, but it must be kept filled with water. Given the water for mating and a fair ration, there is no further trouble about your geese; they will lay and lay fertile eggs too. You can hatch them either with the geese themselves or with hens. By using hens, the geese can be induced to lay a great many more eggs than if allowed to hatch their own eggs.

Mating Ducks.—This is a little early to hatch ducks, but none too early to get the breeders into good form. If they have been running on range they will require at least a month's good feeding to get them ready for the early hatching season. That will bring us into December and young ducks hatched then will be ready for table early in March. One drake to four ducks is about the average. Some people give a drake more, but it is not wise to do so. If he is very vigorous he will be all right with five.

Ducks are very easily raised, and unlike poultry they will not scratch up the garden, though they do it much service in ridding the plants of lice and other bugs. A good warm bed at night, and keeping the young ducklings out of water are about all the difficulties we have to overcome in raising ducklings.

Too much heat is not good, but just a nice comfortable bed, warm water to drink for the first ten days and none of any kind for them to paddle in. This is one place where we can go Nature one better on her way. Wild ducks die by the thousands through hatching near water and the young ones getting in the ponds or sloughs too young. Then too we can beat nature in the hatching season for ducks, because of their migrating nature.

The real hatching season for ducks is Feb. and March in this State, but they can be gotten out much earlier. The early ducklings pay the best, that is the prices are higher, though the eggs too may be a little higher. This coming season, we should have a good market for early chicks, ducklings, and all kinds of poultry. The railroads are all counting on an immense traffic along their lines. The farmer and suburbanite, the man with a bit of land should make provisions to raise all he can in the way of poultry and ducks for market, for he can help pay off the mortgage in no better way. Poultry and ducks enrich the land and they eat many things that would otherwise be wasted. A good big flock of ducks turned out to forage during the day, then fed some good mash at night and again in the morning, will lay an enormous lot of eggs, that bakers and restaurants are glad to get. Then when the price of eggs is not profitable turn them into hatching eggs and have young ducks for the market. The next year is California's opportunity. If we let it go by without an effort to corral some of the good things that are coming our way, the fault will lie with ourselves. Every farmer, whether he owns five or fifty acres of land, ought to be able to make some extra profit from his land out of this Fair. He has had to pay extra taxes, so he should try to make extra profits, and the way to do it is by raising something these people will want to eat.

The directors of the San Francisco Poultry and Pet Stock Show to be held in San Francisco December 8 to 13, are completing plans for the dressed poultry department of their show. This will be one of the educational features of the show, which will be of value to all producers, as visitors will be shown the best methods of dressing poultry of all kinds for the market. Inquiries being received by the secretary for information relating to caged birds indicates that this department of the show will be well filled with a great variety of household pets, and be a very pleasing feature of the show.

Three-year-old Montague and two-year-old Harold were having a bath together in the big tub. Mother left them a moment while she went into the next room. Suddenly a succession of agonized shrieks recalled little figures stood, clasped in each others arms in the middle of the bath-room floor. "O mother," gasped Montague, "I got him out! I saved him! The stopper came out, her. Two dripping, terror-stricken and we were going down!"—Youth's Companion.

Yes sir: there is no place like the farm when the family co-operate, and no place so miserable where the family is divided.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

TO THE POULTRY FARMER—We now have under construction a modern Hatchery, and are booking orders for BABY CHICKS from our heavy laying strains of S. C. White Leghorns and White Plymouth Rocks. We solicit your order for 1915 delivery, and know that you will be well pleased with the high quality of our stock. Write for prices on Sept. and Oct. hatched pullets, and year-old hens for breeders. Hopland Stock Farm, Hopland.

MACFARLANE STRAIN White Leghorn Eggs. $5.00 per 100, chicks Jan., Feb., $12.00, afterward $10.00. Order now, any quantity Cockerels, $2.00; White Rock eggs, chicks, cockerels. Write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. N.B., See article about us by Prof. Adams, U. C., in October "Poultrycraft."

MAHAJO FARM offers old and young stock, in small or large lots, in White Rocks, Black Minorcas, White, Brown and Buff Leghorns, and Indian Runner Ducks at reasonable prices. Address Mahajo Farm, P. O. Box 597, Sacramento.

MAMMOTH BRONZE TURKEYS—Large reductions offered on old stock for short time only. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

ORDER NOW—Thoroughbred Bronze Turkeys from largest Turkey Ranch in Stanislaus county. Large Spring gobblers and hens for breeding stock. Address, Crow's Landing Turkey Ranch, Crow's Landing, Cal., Box 227.

RED BOURBON TURKEYS for sale. First prize winners. **HICKS JUBILEE HATCHERY**—36,000 capacity this season. Now booking orders. White Leghorns and Black Minorcas our specialty. Instructions in caring for young chicks free. W. J. Hicks, R. 2, Petaluma, Cal.

OUR SPECIAL White Leghorn Chicks are well hatched and strong, from healthy, vigorous breeding stock. Book your order now for coming season. San Jose Hatchery, 373 Meridian Road, San Jose.

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PINE TREE POULTRY FARM, Los Gatos, Cal.—Hatching eggs from S. C. White Leghorns. Selected stock. $6 per 100; $50 per 1000. Order now. No baby chix.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 398, Los Gatos, Cal.

MAMMOTH BRONZE TURKEYS—Strong, vigorous, well-marked Toms and Hens from the best blood of prize-winning and utility stock. Prices reasonable. Geo. A. Smith, Corcoran, Cal.

MULICK'S MAMMOTH BRONZE TURKEYS.. 1st State Fair, Petaluma, Stockton, Sacramento, Willows. Young stock for sale. N. E. Mulick, Willows, Cal.

WHITE MINORCA Pullets and Cockerels. Fine cock, best prize winning stock. C. Earl Wetherbee, Upland, Cal.

THOROUGHBRED White Holland Turkeys—Prize winners. Hens, $4. Toms $8. U. S. Smith, Tulare, Cal.

WHITE ROCKS—BABY CHICKS. Booking orders now for Fall or Spring delivery. Mrs. J. B. Tupper, Ceres, Cal.

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INCUBATOR CHICKS—White Rocks and White Leghorns. High class stock. Send for booklet of prices Mahajo Farm, Box 597, Sacramento, Cal.

MAMMOTH BRONZE TURKEYS—Early maturing, prize-winning stock; also Guinea fowls. Stock and eggs. John G. Mee, St. Helena, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING Special exhibition matings, $7.50 per 15; utility, $5 per 15; $10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. G. W. Suits, 378 Bandini Ave., Riverside, Cal.

WHITE HOLLAND TURKEYS—Fine Breeding Stock from flock winning first prize at State Fair, 1914. David M. Berry, R. R. No. 1, Manteca, Cal.

PREMIUM STRAIN—Barred Rocks are the best for quality and utility. Stock for sale. Orders booked for eggs. Folder free. Pyke & Davis, Oroville, Cal.

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL Address Wm. A. French, 545 W. Park St., Stockton, Cal.

FOR SALE—Pure bred Rhode Island Red Cockerels M. Worley, Palermo, Cal.

LARGE BRONZE TURKEYS for sale. Howard Hyde, Davis, Yolo Co., Cal.

BLUE ANDALUSIAN CHICKENS, Pearl Guineas. Address E. A. McKinley, Ukiah, Cal.

THOROUGHBRED BELGIAN BUCKS and Does for sale. Geo. B. Vawter, Arbuckle, Cal.

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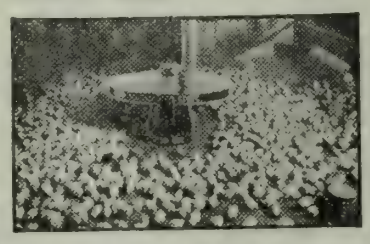

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FREE BOOK
Raising Calves without milk. Everything you need for stock and poultry raising. Write today.
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is apt to be a time of trouble with your hens.
COULSON'S EGG FOOD
will help to keep them in good condition, saving loss and worry.
A healthy hen will molt quickly.
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Circular containing 100 mechanical movements mailed free

BABY CHICKS
Standard Bred.
The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price list and pamphlet free upon request. Now booking orders for Fall and Spring delivery.
THOMAS HATCHERY, Petaluma, Cal., Route 6.

THE PETALUMA POULTRY SHOW.

[Written for PACIFIC RURAL PRESS by Jas. D. Yates.]

One of the most interesting shows that we have attended this year was the one held at Petaluma. The Dreamland Rink was well filled with exhibits, and an adjoining tent was filled with the feed supply houses, incubator firms, etc. The poultry show consisted of about 700 birds, the quality being fully up to the average, and the exhibitors seemed to be pleased with the number of sales made. The attendance was good, showing that while Petaluma is a commercial poultry center, people are interested in the standard-bred poultry as well. Plans are already being laid for a show next winter.

In the barred Rocks the principal winner was G. E. Tobin of St. Helena, who won 1st exhibition pen and 1st breeding pen, 1st and 2nd cockerel, bred hen, and color special. Mr. A. Bowler, breeder of buff Leghorns, won 1st and 2nd cock, 1st and 3rd pullet, and silver cup on display. He has good under-colored birds.

Thomas McGuire, secretary of the show, was a busy man seeing after the many details of the show. He breeds white Wyandottes, and won practically everything. They were good exhibition birds, and judged by Hogan for utility, also averaged well towards the 200-egg-per-hen mark.

Mr. S. G.Farmstrong of Petaluma, who has about 600 head of rabbits, including New Zealand Reds, Belgian hares and Belgian giants, won best display on rabbits.

The Victor Incubator Company of Decoto had a big display of Victor incubators and brooders. Their incubators are of the hot-water type, and a glance at the machine shows that it is built for business and to get results. A good future is expected for this company.

The Electro Hatch Incubator Company of Petaluma showed a new electric incubator. They have a device called the automatic switch that controls the temperature to a surprising accuracy, and that is the point where many machines fail. Not only is an even heat given the eggs, but the static electricity adds vitality and strength to the chicks during incubation. They are manufacturing several different sized machines, from 270 to 810 egg capacity.

The White Hatchery operates 28 of these machines, and the fine results need no further proof.

THE WILLOWS POULTRY SHOW.

[Written for PACIFIC RURAL PRESS by James D. Yates of Modesto.]

Partly on account of conflicting dates of the Willows and Petaluma shows, the Willows show was smaller in the number of birds shown and attendance than it should have been. While there were a number of good birds in the show, the quality was not up to the average.

C. G. Hinds judged the show, and general satisfaction was expressed with his work.

O. F. Schuchard, secretary, did a great amount of work and advertised the show well.

Judge Hinds gave an interesting talk on judging and show management. He suggested that the smaller county shows charge no entry fee for the birds that come in from the county, and give no cash prizes, but give ribbons. This is a good suggestion, as there is no doubt it will bring out double the number of birds that the farmers usually bring in, and it will double the attendance at any local show.

Mrs. R. S. Spaulding of Woodland won 1st and 2nd hen in R. I. Reds, 2nd and 3rd cockerel in buff Orpingtons, and 1st pen in black Minorcas. Mrs. Spaulding also breeds pheasants and other rare birds. We called at her place and was surprised to see quite an aviary.

Mr. N. E. Mulick, the man that breeds the Mammoth bronze turkeys, won 1st as usual. He has a nice flock of these birds and made a good showing.

A. C. Masteller of Oroville won 1st cockerel, 1st and 2nd pullet on black Minorcas. He has a good strain of the blacks.

M. H. Dewey of Oroville breeds the young strain of white Leghorns, also Campines and partridge Rocks.

Specials were awarded as follows: Best pen, Mrs. Ridley of Oakland, on white Plymouth Rocks; best male, Otto F. Shuchard of Willows, on R. I. Red cockerels; best female, Mrs. Winslow of Sacramento, on white Rock hen; best colored bird, Fred Heinz of Willows, on R. I. cockerel; best ten birds, E. L. Wright of Willows, on Langshans; best cock, hen, cockerel and pullet, Mrs. Ridley of Oakland on white Rocks.

CALIFORNIA POULTRY LITERATURE.

In the poultry page of the Los Angeles Times of November 22nd, the following review of "California Poultry Practice" appeared, from the pen of the veteran poultry writer, H. W. Kruckeberg:

Nearly all the books on poultry culture that are available in our markets are the result of eastern and European experiences and practices, hence often are misleading in their instructions and not always correct in their conclusions. And while the basic principles of poultry-keeping are much alike the world over, nevertheless climate, soil and environment are so radically different in California that the management of poultry is almost distinctive with us. Allowing for these facts, it is pleasant to note the advent of an occasional book treating of the American business hen from a purely California point of view, giving those practices that time and experience have proven adaptable to this State. Within the past month two such efforts have come to our notice.

The first is entitled "California Poultry Practice," by Mrs. Susan Swaysgood, of Pomona, a woman who has followed poultry culture for something like forty years, first in Sonoma county and of later years in Southern California. It is a book of some 150 pages, giving in simple and lucid English the methods and practices that have been garnered over a period of nearly fifty years in the breeding, management and caretaking of poultry under a California sun. What the author has to tell rings true, and while advancing no new theories nor any "secret" systems, it yet tells in a matter-of-fact way the essentials that stand for success in both the handling of large and small flocks. To the beginner it is a safe and sane guide, and to the experienced it has some things to tell that even the veterans may ponder over to advantage.

Published by the Pacific Rural Press, San Francisco. Price, $1.

CALIFORNIA POULTRY PRACTICE

Written to Teach

BETTER POULTRY METHODS

On the Farm

BY

SUSAN SWAYSGOOD

Contents by Chapters.

1 Some of the Advantages of California Poultry Raising.
2 When and How to Start in the Poultry Business.
3 Location.
4 The Colony Plan.
5 Open Front Houses.
6 Large and Small Plants for Eggs.
7 The Care and Management of Eggs.
8 How to Build an Incubator Cellar.
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10 Raising the Chicks.
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21 Balanced Ration for Heavy Breeds.
22 The Mold that Injures Poultry.
23 Egg Foods, or Condition Powders.
24 The Value of Milk in the Poultry Yard.
25 The Management of Poultry During the Summer.
26 The Molt in California.
27 The General Purpose Fowl.
28 Capons.
29 Prepotency and Prolificacy.
30 The Mediterranean Class.
31 The American Class.
32 The French Breeds.
33 The Asiatic Class.

Just from the Press

Mrs. Swaysgood has spent a lifetime in raising poultry, mostly in California. This cloth-bound book of 160 pages, besides half-tone pictures, tells of the up-to-date methods now used on California poultry farms. Every reader of this journal should have a copy.

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Pacific Rural Press

525 Market Street

San Francisco

The Home Circle

PLAIN CAT.

Our neighbor's cat is Persian, the Jones's is Maltese,
Aunty's big Angora has feathers to her knees
(At least they look like feathers), and a tail so big and white;
When that kitty meets a puppy dog, I tell you it's a sight.
But when I ask, "What breed is mine, my pussy, sleek and fat?"
They laugh and pull my curls and say, "I fear—just cat."
It's true, her eyes aren't yellow, and her tail is rather small;
I don't know if she ever had a pedigree at all.
(That big word means her mother, her grandma, too, they say;
That they all took prizes at a show, were marked a special way.)
What do I care for markings, for prizes and all that?
My kitty's just as precious, if she is just cat!
She was the dearest kitten, all scamper and all fur!
She may be very common, but I know she's good and true,
For she meets me when I come from school with a loving little mew;
And, when she's round, we never see a naughty mouse or rat,
And I believe I love her better 'cause she's just plain cat!

—Selected

JOSEPH'S CAMPFIRE

By Rose Brooks

Joseph stood at the window waiting for his mother to come home, and wondering whether she would bring him a surprise. Pretty soon Mrs. Baldwin turned the corner, and sure enough, she was carrying a parcel; but instead of having it tucked under her arm, she was carrying it very carefully.

"Oh, mother, is it for me?" shouted Joseph, his eyes shining, as soon as his mother had stamped the snow off her feet and come in.

"Yes, it's for you, Joseph; but you must let me help you open the bundle, because it's something that will spill." And together they sat down on the rug in front of the open fire, and Joseph excitedly began to untie the string and take off the paper, while his mother held the bundle very still.

"Oh,—they're gold fish—three little bits of ones,—and don't they shine! What shall we give them to eat? and what shall we name them? and what is that green twig in the bowl for?" Joseph was all interest and eagerness as he bent his black head over the bowl.

"That's not a twig, dear, though it does look like a twig from a larch-tree, doesn't it? It's just a piece of a kind of seaweed, and the fish like to dart through it and to rub their noses against it. And look in my muff, and you'll find a little tin box of fish food. The fish man said if we gave them just a little each day, they would keep well, and if we would give it to them each day at just the same hour they would learn to expect us, and would get tame just as canary birds or rabbits or any pets are, and would snap for the food the minute we put it in."

Joseph had opened the box carefully. "Shall we feed them for each day, just now,—just before supper?" he asked.

"Yes, if you like, and remember they will be your little pets if you don't forget them."

Joseph dropped a few grains of the food in, thoughtfully. "But, mother, fish don't ever get tame, do they? Did you ever see a tame fish?"

"Yes, ever so long ago, when I was a little girl; and they were not fish in a bowl like these, but wild trout in a mountain stream, up in the mountains in California."

"One summer, when you went camping with your mamma and papa?" Joseph's voice was always wistful over the camping stories. Why couldn't he have been taken camping every summer, and slept on a bed of fir boughs, all rolled snug and warm in a big buffalo robe, blinking up at the stars until he fell asleep,—the way his mamma did when she was a little girl?

"Yes," said Mrs. Baldwin, smiling. "We had a camp one summer near a cold little creek, and, when we scampered to the creek to wash, or to bring water to camp, we often saw big fat trout; but the minute they saw us they darted away like a flash!"

"But I thought you said they were tame," Joseph prompted.

"Not at first, but by a great deal of patience my little sister, who loved all animals, and never wanted a fish caught or a quail shot, finally tamed them. She chose a little clump of fir trees that grew at the edge of the creek, and from behind them every day, just after lunch, she would throw crumbs into the creek. For a week she was very, very careful to make no noise, and to keep well hidden behind her little trees. Then for a day or two she let just a little bit of her dress show, and the fish, who had grown to expect their food every day, and had found out that there were no fish-hooks under the crumbs, to be jerked into their mouths, very gradually grew less and less afraid, until finally Janet could stand right over them, on a narrow plank she had put across the creek, and the fish would come darting to her from up stream and down, fighting for the food, splashing and jumping, not in the least afraid; and Janet was so pleased! I can see her now, as she used to stand bareheaded in the sunshine, on her little trout bridge as she called it, throwing crumbs to the fish and laughing to see them snap for them almost before they touched the water."

"And did you feed them, too, mamma?" Joseph was looking into the fire as if he saw the camp, too, and felt the clear mountain sunshine.

"No, indeed," Mrs. Baldwin went on. "The fish are smarter than most people think them. Let anyone but Janet go out on the plank, and not a single fish would appear, no matter how many crumbs were thrown to tempt them. But the minute Janet ran out again and every one else disappeared, up darted innumerable hungry, friendly fish.

"And now, Joseph, I'm nice and warm, and we'll put the fish bowl up here on the corner of the table, with the little tin box of food in the table drawer; and every afternoon we'll feed them together, and see if we can make them tame,—shall we?"

"And I can tell them apart already," answered Joseph, "so I can name them. I'll call the goldest one Nugget, and the one with the black spot on his tail, Spottail, and the one with three parts of his tail, we'll call Looksharp. You didn't know there was one with three parts to his tail, did you, mother?" Joseph demanded, laughing.

"No," admitted Mrs. Baldwin looking curiously into the bowl, "I hadn't noticed. But I'm glad you

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did, because I think maybe you would make a good little camper after all,—and father says next summer maybe"—

"O mother, mother, does he say we'll go? really go?"

"He says maybe," laughed his mother, returning his bear hug.

"And every night, when we feed the fish, will you tell me a camp story? and we'll pretend the fire is a camp-fire?"

"I'll try, Insatiable!" laughed his mother; "but maybe the stories will not hold out. Anyway, I know one more about a frisky little chipmunk that we used to call Skipjack, and I'll tell you that to-morrow night."

HINTS TO HOUSEKEEPERS.

The best remedy against ants is cayenne pepper. Spread it on the shelves of the store closet under the paper that covers them.

The best way to clean a Brussels carpet is to lay it face down on the grass and beat it as it lies there, then by the corners drag it over clean grass to brush off the loose dust.

When flavoring has been forgotten in a pudding or cake, the fault may be remedied by rubbing the desired extract over the outside of the cake as soon as it is taken from the oven.

When polishing mirrors, windows, or picture glass with whitening, the best way to use it is to have it in muslin bags. Dampen the glass lightly, then rub with the bag and polish off with a crumpled newspaper.

A solution of vinegar and salt is the best thing to clean polished iron as well as copper. Heat the salt and vinegar in the frying pan or other dish. Rub off the stains, then wash it off and scour it with sand soap.

An excellent substitute for potatoes at a dinner is rice, cooked in milk and well salted, put into a dish and browned in the oven. Make a hot lemon sauce and pour it over the rice when it is taken from the oven and just before the dish is sent to the table.

To keep the varnished wood of furniture looking fresh and bright, it should be rubbed thoroughly with oil from time to time. Only a little oil should be used, and that carefully rubbed in with a flannel until it seems to have all gone, otherwise it will catch the dust.

Stained borders of floors will require doing over once a year if worn places are not to become noticeable. The stain and varnish may be bought and applied separately, or mixed together and applied at once. The latter is, of course, the readiest method, but the former is perhaps the more lasting.

A remedy against creaking shoes is to allow the soles to stand over night on a platter containing a small quantity of olive oil, so that they will become saturated with it. This will protect them against dampness; and if they are carefully wiped off on the sole, they will not grease carpets and rugs, though this treatment is intended essentially for walking shoes.

Stains on the fingers from handling potatoes or trimming vegetables or fruits may be readily removed by thoroughly rubbing with an overripe tomato; if a little rotten it acts the more quickly. A stem of rhubarb or pie plant is equally effectual, and may be had from early spring until late in the fall. Either will prove better than soap or anything else, and cheaper than oxalic acid or a rubber brush.

POISON OAK.

To the Editor: In your issue of Oct. 31, I saw a formula for poison oak. As I have a very bad attack on my face at the present I took the formula to the druggist and he refused to fill it. As I have the unfortunate luck of getting the poison every time I go near it, I would appreciate it very much if you could suggest where I could get this filled. —Mrs. F. E. G., San Juan Bautista.

[You will be well before this can be published if you leave your face alone. Eating disturbs and irritates it simply by the motion of the jaws, so do as little chewing as you can. Read the writer's experience in the issue of Oct. 17. Poison Oak will run its course in spite of medicine, all "sure cures" to the contrary notwithstanding. Severity of attack and length of time affected are proportionate to exposure. Leave it alone, both before and after you get it. We find that Rus Tox is fluid extract of poison oak itself, while oleum Tiglii is croton oil, a violent irritant unless sufficiently diluted. The writer ate a few little twigs of poison oak once to make himself immune. He didn't eat enough. The immunity of the grave isn't satisfactory anyhow. We know other druggists who would not care to fill the prescription.—R. E. H.]

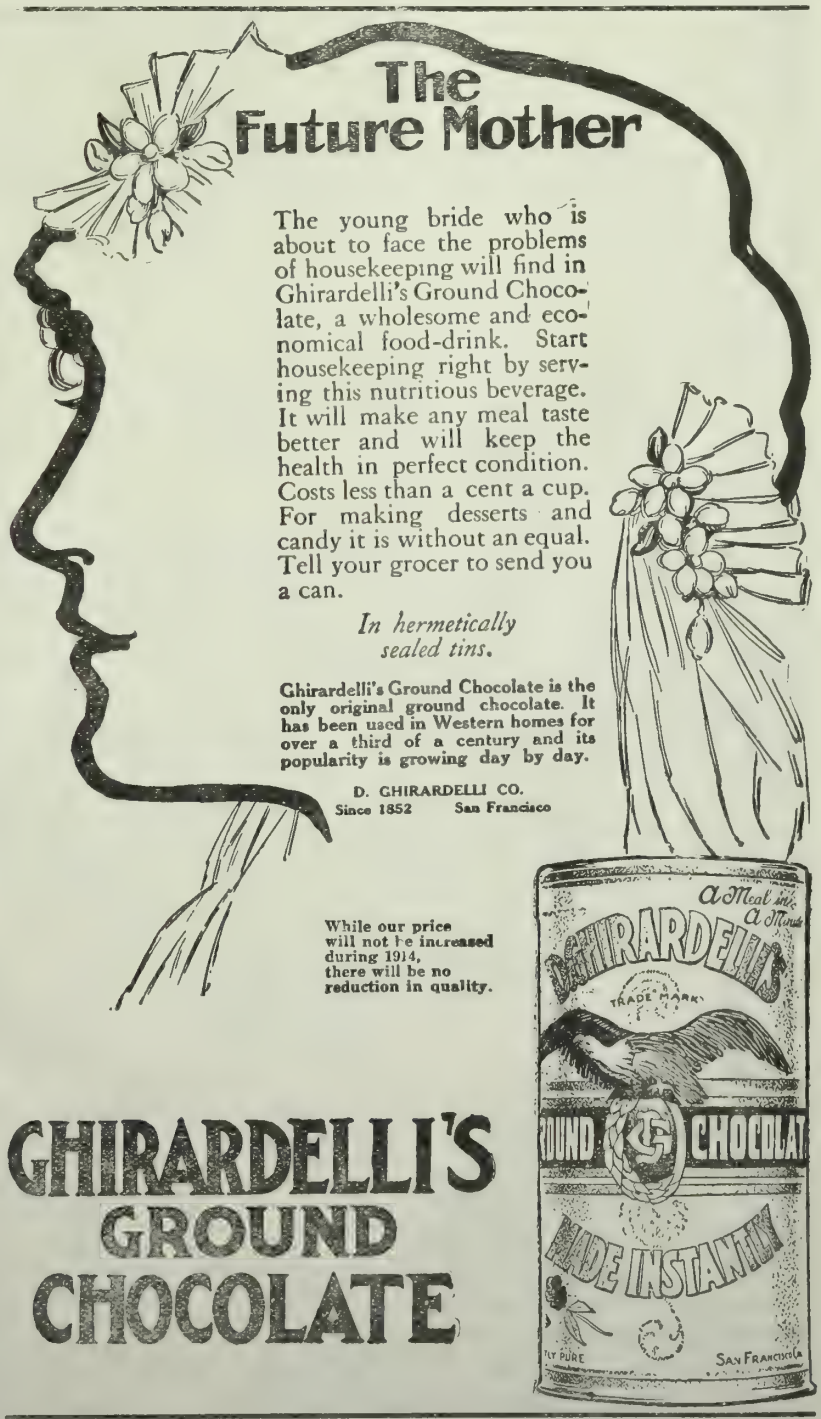
HYACINTHS.

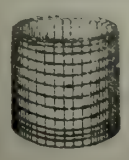
Hyacinths grown indoors will be a success if the following rules are observed: Fill your glass with water, throwing in a small piece of charcoal, and let the lower part of the bulb just touch the water. Put them into a cool, but not a damp place, away from the light, and leave them till the glasses are filled with roots and leaves have begun to develop; then give them as much sun and light as you can, adding, if necessary, occasionally a little water. Unless the water becomes muddy, never change it, and don't put the pots and glasses into a cellar where the atmosphere is damp, or into a cupboard where there is no atmosphere at all. A spare room where there is no fire and plenty of air is best."

Do you desire a long season of lilies of the valley? Then plant clumps on each of the four sides of the house and your desire will be gratified in a very simple fashion. Those on the south side will bloom first. The others will come along in succession as the weather warms up; those on the north side following last. Mignonette makes an excellent house plant, if seeds are sown in pots late in the summer.

A young girl in school was reprimanded for mispronouncing the word "picturesque." In return she explained that she had used the first e where it belonged—picture—and the remaining letters spelled sque. She had pronounced it picture-sque. In justification of her conclusions she said that no letter should be left at such loose ends in any word. She was almost victorious, but her confusion came later when an older sister at most provoking times would assure her that her costume was exceedingly picture-sque.

It has been stated that more milk is contaminated through muddy corrals than through improper handling of the milk at the milk house.





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The Markets.

San Francisco, Nov. 25, 1814.
(Unless otherwise noted, prices quoted are f. o. b. San Francisco.)

WHEAT.

Both export and domestic demand continues strong in the north, and with the bulk of local supplies coming from that source this market shows corresponding firmness, the club and red varieties being stronger than others. Values, however, show little change.

Cal. Club, Ctl.	$1.95 @ $2.00
Forty-fold	2.00 @ 2.05
Northern Club	$1.95 @ 2.00
Northern Blue'm	2.10 @ 2.15
Northern Red	1.95 @ 2.10

BARLEY.

Futures show less activity, but the spot market for both brewing and feed is well maintained, and values are firm at the former level.

Brewing & Ship'ng	$1.20 @1.25
Choice Feed, per ctl.	1.17½ @ 1.22½

OATS.

There has been heavy trading in the northern markets, with large sales for export, and this market is firm in sympathy. The local demand is of moderate proportions, and offerings are ample for all current needs.

Red feed	1.45 @1.50
Seed	1.65 @1.90
Gray	Nominal
White	1.55 @1.60
Black Seed	1.75 @2.25

CORN.

Prices are unchanged. Eastern corn is fairly steady, with moderate supplies and no heavy demand. Egyptian is moving fairly well as last quoted.

California Yellow	Nominal
Eastern Yellow	1.80 @1.85
Eastern White	Nominal
Egyptian White	1.67½ @1.70
Milo Maize	1.65 @1.70

BEANS.

The bean market in general continues in good shape. The harvest is pretty well over, but notwithstanding the large crop of most varieties, there is sufficient demand to keep prices on a firm basis. Inquiries have been quite numerous from the middle west, and eastern buyers are now taking more interest, while considerable business has been done for export. Blackeyes are a little easier, but bayos show a slight advance this week, and whites and limas are very strong, with an upward tendency. Growers in general are holding firmly, feeling that the consuming requirements of the coming year will be unusually large.

(On wharf.)

Bayos: Cal. per ctl.	$4.50 @4.75
Blackeyes	3.75 @3.85
Cranberry Beans	3.65 @3.75
Horse Beans	3.50 @3.75
Small Whites	3.90 @4.00
Large White	3.75 @3.90
Limas	5.15 @5.25
Pink	3.00 @3.10
Red Kidneys	5.00 @5.10
Mexican Red	4.75 @5.00

SEEDS.

There is nothing new in regard to prices. The general demand is a little more active, but supplies in the principal lines are ample.

Alfalfa	16 @17 c
Brown Mustard, per lb	Nominal
Canary	10 @12½c
Hemp	3½ @ 4 c
Millet	2¾ @ 3¼c
Timothy	7½ @ 8 c

FLOUR.

While the market is very firm, and there has been some talk of higher prices, the local figures have not changed for some time.

Cal. Family Extra	$6.60 @ 6.80
Bakers' Extras	5.50 @ 6.00
No. 1 Wheat, or Wheat and Oats	$9.00 @ 11.00

HAY.

Offerings have dropped off materially in the last week, as stock is well cleaned up in the fields and prices are too low to attract heavy shipments from storage. Local business remains quiet, with little demand, though fancy hay is very scarce and commands considerable premium over ordinary stock. Offerings of alfalfa are large, but most of it finds buyers. There was quite a large shipment to the Philippines recently, but on the whole the export movement is not of very large proportions.

No. 1 Wheat	$9.00 @ 11.00
do No. 2	6.00 @ 8.50
Barley	5.00 @ 7.50
Tame Oats	6.00 @ 12.00
Wild Oats	6.00 @ 8.00
Alfalfa	6.00 @ 9.00
Stock Hay	4.50 @ 5.00
Straw, per bale	30 @ 45c

FEEDSTUFFS.

The market shows little feature at the moment, prices being unchanged. Bran is a little easier, with fairly good supplies at the moment, but no decline is expected.

Alfalfa-Molasses Meal, per ton	$19.00 @ 20.00
Alfalfa Meal, per ton.	14.00 @ 15.00
Bran, per ton	26.00 @ 27.00
Oilcake Meal	33.00 @ 34.00
Cocoanut Cake or Meal	25.00 @ 25.50
Cracked Corn	42.00 @ 43.00
Middlings	33.00 @ 34.00
Rolled Barley	25.00 @ 26.00
Rolled Oats	32.00 @ 33.00
Shorts	29.00 @ 30.00

VEGETABLES.

While comparatively few changes are noted, the general tendency is upward, and the market shows a better tone than for some time. Celery in particular is in active demand, both delta and Santa Clara stock being higher, and southern lettuce has advanced sharply. Wax, string and lima beans also are much higher, with a fair demand for this season and limited offerings. While the tomato season is nearing an end, there is still considerable stock coming in, and prices are hardly up to last week. Green peppers are firm, with other lines about as before.

Green Peppers, bell, lugs	35 @ 40c
Green Peppers, Chili	30 @ 40c
Carrots, per sack	30 @ 40c
Tomatoes, lugs	30 @ 60c
Beans: Wax, per lb.	5 @ 10c
String	5 @ 8c
Lima	5 @ 8c
Cucumbers, lugs	35 @ 65c
Eggplant, lugs	25 @ 50c
Summer Squash, box	50 @ 75c
Cream Squash, box	30 @ 35c
Celery, doz	20 @ 30c
do crate	1.50 @ 2.00
Sprouts lb.	2 @ 3½c
Lettuce, southern crate	1.35 @ 1.50

POTATOES AND ONIONS.

The potato market is in rather poor shape, as there has been very little shipping demand. The southwest is supplied from other sources at low prices, leaving a surplus here, and some northern stock is coming in. Onions are stiffening up, as a good deal of stock has gone east, and much of the crop left in the fields has been damaged, leaving only moderate supplies available.

Potatoes: Salinas, ctl.	$1.40 @ 1.50
River Burbanks, ctl.	50 @ 1.00
Sweet Potatoes, ctl.	1.35 @ 1.50
Onions: Yellow, sack	55 @ 65c
Garlic, per lb.	10 @ 12½c

POULTRY.

Attention has been centered on turkeys for the last few days. Local offerings, though not excessive, are plentiful, and the demand has not been sufficient to raise prices over last week's level. Live birds, in fact, are rather weak, while some fancy dressed stock has brought as high as 27c. Chickens are in rather better demand, and the larger offerings of hens show some improvement in prices.

Turkeys, lb	20 @22 c
do, dressed	23 @26 c
Large Broilers	20 @22 c
Small broilers, per lb.	22 @24 c
Fryers	18 @19 c
Hens, extra, per lb	17 @18 c
Hens, extra, er lb	17 @18 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb.	17 @18 c
Squabs, per doz	2.00 @ 3.00
Geese, per pair	2.00 @ 3.00
Ducks, doz	$5.00 @ 9.00

BUTTER.

The slight upward movement in extras continues, and firsts are also a little higher than last week. Aside from a very fair local demand, there is some shipping business most of the time, which tends to stiffen the market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	33½	33	33	33	34	..
Prime	28	28	28	28	28	..
Firsts	27	27	27	27	27	..

EGGS.

Storage stock is figuring to quite a large extent in current business, the demand for extras being limited at present prices. Offerings of the latter grade, however, are moderate, and the week shows a gradual advance, though the present figure is below last week's top figure.

Extras	47½	47½	48	49	49½	..
Sel. Pul.	36	36	36	36½	37	..

CHEESE.

Offerings of northern stock are quite liberal, and flats are slightly lower. The inside figure on Monterey cheese has also been shaded.

Fancy California Flats, per lb.	15½c
New Young American, fancy,	16 c
Monterey Cheese	14 @ 16c

Los Angeles dairy prices.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extras	36	36	36	36	36	36
Eggs	48	46	46	46	46	46
Cal. Cheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14¼

DECIDUOUS FRUITS.

Cranberries continue in good demand, but considerable eastern stock has been coming in, and liberal offerings have brought a slight reduction in prices. Other berries are now moving in a very limited way. While the more attractive offerings of apples have found somewhat more local demand for Thanksgiving, the light shipping movement prevents any improvement in prices, and the market is heavily overloaded. A few black figs are still coming in, but the season is about over. Offerings of casabas are decreasing and prices are stiffening somewhat. Grapes are still in ample supply, and move fairly well at the old prices.

Cranberries, bbl	$7.75 @ 8.25
Huckleberries, lb	5 @ 7c
Strawberries, chest	3.00 @ 4.00
Raspberries, chest	5.00 @ 8.00
Apples, Newtown Pippin	50 @ 90c
Belleflowers	40 @ 65c
Gravenstein	50 @ 1.00
Pearmain	50 @ 65c
Jonathan	40 @ 75c
Crabapples	25 @ 50c
Quinces, box	25 @ 40c
Pears, box:	
Winter Nellis	1.25 @ 1.50
No. 2	65 @ 75c
Other varieties	35 @ 75c
Figs: Black, double layer	1.00 @ 1.25
Persimmons, box	50 @ 80c
Casabas, doz	40 @ 1.35
do lugs	65c
Grapes: crate	50 75c
Black	50 @ 75c
Cornichon	50 @ 60c
Lugs	65 @ 1.00

DRIED FRUITS.

The dried fruit market continues to receive considerable interest, both here and in the east, as the upward tendency in prices and the rather light supplies in dealers' hands have brought more inquiries in that quarter. The only quotable advance this week is in prunes, which still find some export demand. This export business moreover, has stimulated buying in domestic markets; and as packers are pretty well cleaned up they have had to meet the growers halfway. As high as 6c is reported in some quarters, and as the supply is getting into narrow compass, the outlook is favorable. This movement of prunes has tended to bring more attention to other fruits, and there is some demand for apricots, though the movement is not heavy. Peaches are still moving very slowly, but are held with somewhat more confidence. A few Smyrna figs have arrived here, but stocks in the east are light, and there should be a good cleanup of California stock. The New York Journal of Commerce says: "The upward trend of prices in California prunes, which in some days past has been a prominent feature of the dried fruit market, is becoming more pronounced. Locally spot business in prunes is decidedly better, though the movement is largely on the hand-to-mouth order. The improvement in the Coast situation is attributed to export inquiry, which has already resulted in sales of substantial quantities, and to a demand from the Middle West. A stronger market for peaches for Coast shipment is noted. Fancy stock is particularly strong, as supplies in that grade are reported to be well cleaned up, specially Muirs, which are said to be about exhausted. Extra choice and choice grades are reported to be firmer but are not quotably higher. Apricots are steady, but there is little demand for forward coast shipments from the trade in this section, and the consuming demand is light. A little more interest is shown in spot old crop fancy seeded raisins, though no important market is rather firm on the basis of previous quotations.

California

AND PACIFIC COAST

Nature's Exposition

AND

ALL-THE-YEAR

VACATION GROUND

San Francisco, Oakland, Berkeley and Bay Region
Sacramento and San Joaquin Valleys
Santa Clara, Pajaro and Salinas Valleys
Santa Cruz, Mountains and Big Trees
Del Monte and Monterey Bay Points
Byron, Paraiso, El Pajaro and Gilroy Hot Springs
Yosemite National Park
Mariposa Big Tree Grove
Lake Tahoe and Sierra Region
Kings and Kern River Canyons
Lake County Resorts and Springs
Paso Robles Hot Springs, Santa Barbara and Coast Country
Los Angeles and Its Beaches
Pasadena, Riverside and Redlands
Imperial and Coachella Valleys
Shasta Springs and Resorts
Klamath and Crater Lakes
Willamette, Umpqua and Rogue River Valleys
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THE EXPOSITION LINE 1915—
FIRST IN SAFETY

Evap. Apples, 1914	4 @5 c
Apricots, 1914	6 @9 c
Figs: White, 1914	4 c
Black	2½ @2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, '14	5¾ @6 c
Peaches, new	3¼ @3¾c
Pears	6 @8 c
Raisins (in sweatbox):	
Loose Muscatels	4 @4½c
Seedless Sultanas	5 c

CITRUS FRUITS

Practically all of the Valencia oranges have been shipped, and found the eastern markets in prime condition for reception of the good fruit. The best stock sold from $5.45 to $6.35 per box, averaging $6.00 at the New York auctions, while a few carloads of undesirable condition and quality averaged less than $2.50. The general run, however, brought very satisfactory figures.

It is estimated that the number of cars of navels will fall short of last year's shipments by several thousand cars, the estimate being 36,000 cars from south of the Tehachapi and 5,000 from north of Tehachapi. Tulare has shipped only 83 cars to date as against 417 carloads last year. The fruit has been taking on color and sugar rapidly, and by now heavy shipments of Tulare navels should be going forward.

The Florida crop is estimated between 8,500,000 to 9,000,000 boxes, and Porto Rico, which shipped 229,000 boxes last year, is reported to have a 50 per cent increase. Louisiana also estimates she will produce 300,000 boxes.

In San Francisco the arrivals of oranges have been rather large the last few days, and the fruit has found a better demand than for some time, prices standing the same as last week. Valencias, however, show less firmness. Grapefruit is lower, and the top figure on lemonettes has been cut.

Oranges: Navel, box	$2.00@2.50
Valencias, box	2.25@3.25
Tangerines, crate	75c@1.25
Grapefruit, seedless, box	1.75@2.25
Lemons, box	1.75@4.00
Lemonettes, box	1.00@1.75
Limes, case	3.00@5.00

NUTS.

Some local dealers describe the market as nominal at present, as the Thanksgiving requirements have been fully covered, and there is no trading of any consequence. The arrival of Manchuria walnuts of comparatively good quality tends to depress prices in this line, and 16c. is about the best offer from local dealers for budded walnuts. Current offers for odd lots of almonds range from 14c to 16c for good softshells, and about 8c for hardshell, but there is really not much demand here. Supplies appear to be light in the east, and there may be some demand later from that quarter.

(Association Prices.)

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
Budded	18 c
No. 2	12 c

HONEY.

Most holders, both growers and dealers, are holding out for the prices quoted. A good many small lots, however, are being forced out at concessions, and considerable fancy Nevada comb has been offered here at 11c. There is little demand anywhere.

Comb: White	11 @13 c
Amber	7 @10 c
Dark	5 @ 7 c
Extracted: White	7 @ 8 c
Amber	4¼ @ 6c
Off Grades	3 @4 c

BEESWAX.

Thre is a little movement at the old prices, but the market is not very active.

Light	31 @32½c
Dark	27½ @31 c

HOPS.

Local values are unchanged. While many growers are holding, some are selling at the current basis, and there is more trading than for sometime. Sales have been made in Sonoma county at 9½ to 10c, and considerable business has been done in Washington at 7 to 10c.

1914 crop	8 @10 c

LIVE STOCK.

Owners of beef cattle are disposed to hold off a little, and the market is quite strong in consequence. Values, in fact, are firmly maintained on everything but hogs, which are Offerings in the local auction still coming in freely.

Steers: No. 1	7 @ 7¼c
No. 2	6¾ @ 7 c
Cows and Heifers: No. 1	6 @ 6¼c
No. 2	5½ @ 5¾c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½ @ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
225 to 300 lbs	7¼c
100 to 225 lbs	7¾c
Prime Wethers	5½ @ 6 c
Ewes	5 @ 5½c
Milk Lambs	6¾ @ 7¼c

DRESSED MEATS

Steers	10¾ @11½c
Heifers	10½ @11 c
Veal, large	13½ @14 c
Small	15 @15½c
Mutton: Wethers	11 @12 c
Ewes	10 @10½c
Suckling Lambs	13 @13½c
Dressed Hogs	13 @14 c

HORSES.

Oofferings in the local auction markets this week are the largest in some time. There appears to be some interest on the part of local buyers, but it is too early to tell what will develop. Most of the stock is of medium weight, coming from northern California. The foreign demand has not yet been felt here.

Heavy drafters, 1700 lbs. and over	$225@275
Light Dra's, 1500 to 1650	200@215
Chunks, 1350 to 1500	180@200
Wagon Horses, 1250 to 1350	125@175
Green Mountain Range	60@100
Delivery Horses, 1050 to 1250	1.00@ 1.10

Publisher's Department

While the Rural Press is edited and managed in the interest of the agriculturists of the coast, yet our readers must remember that the subscription price of one dollar for 52 copies of this journal hardly pays for the white paper, press-work and postage. Because it is conceded that the Rural Press has the best class of farmers as readers, men who have money to pay for what they want, our advertising columns are in demand by those who seek the country trade. That the advertisements may be of benefit to our readers, as well as to those who pay for their insertion, we have tried to keep out undesirable or fraudulent announcements. Our subscribers will help us immensely when doing business with advertisers to mention the Rural Press. We believe that by doing so you will get better treatment, as the merchant who does advertise wishes your trade and will do what he can to secure and retain it.

We find in this office that our new book, "California Poultry Practice," is of great value in answering poultry queries from subscribers. Instead of forwarding these questions to Mrs. Swaysgood we can usually turn to the book and find the answer, which makes us think that every poultryman should have a copy of the book at his home for ready reference.

The Rural Press is printed one day earlier than usual this week in order that the whole force may observe Thanksgiving day. Reports from our field men were not all in so that we cannot give the total of new subscribers this week. However, we know that a good gain was made.

Elmer Archer of Chico smudged 8 acres of almonds with 650 2-gallon pots in 1913 and saved his crop while those who did not smudge lost heavily.

Farmers do not make a business of raising poultry, yet the egg and poultry market would both be very short if it were not for them, and there are very few farmers that could not make quite a little more money out of ducks and poultry if they would take the girls into partnership. If there are no children, take the wife in as partner, and keep books in a business way, sharing profits and losses equally.

One of the most prosperous fruit ranches around this section is a ten acre peach orchard combined with poultry, ducks, and turkeys. And everything is thoroughbred, the man has Orpington chickens as a side line to his fruit, and his wife has buff Orpington ducks and red Bourbon turkeys. Both advertise and fill their own orders and each helps the other in true helpmate fashion, just like "ye olden times," except that the woman retains her individuality, which used to be sunk in the man's.

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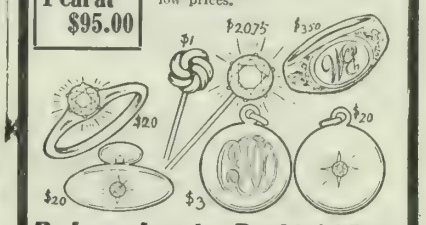

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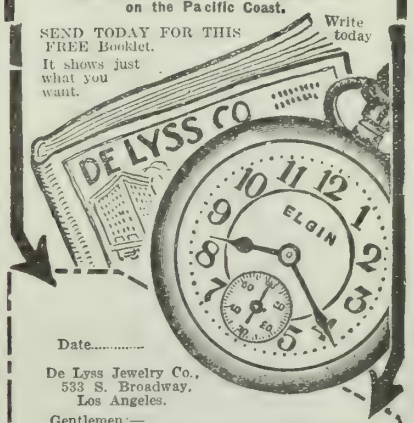

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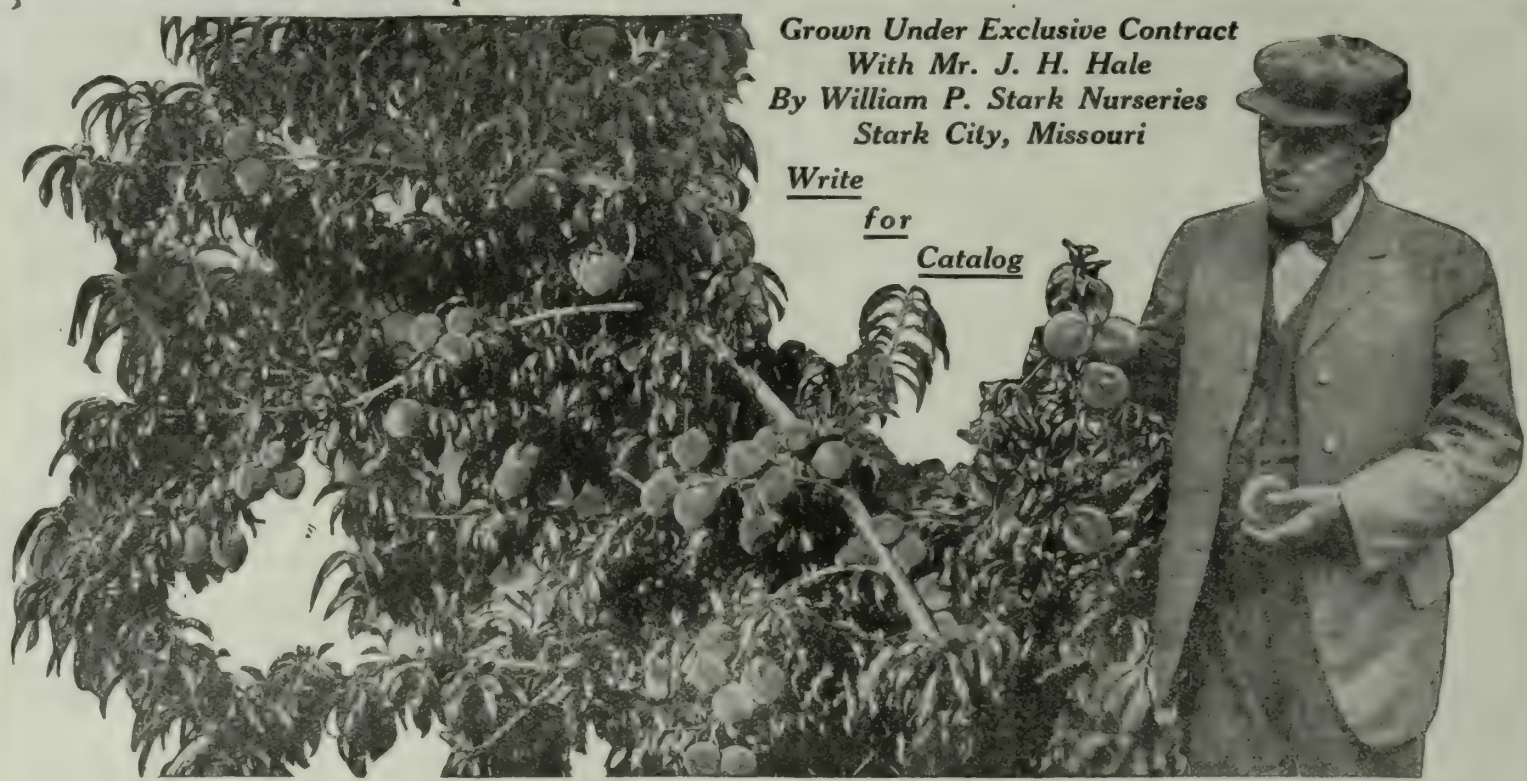

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Prof. E. J. Wickson, Dean College of Agr.
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Concord, Cal., Dec. 18, 1913.
Gentlemen:
Trees received and very much pleased with quality of both roots and tops. They were carefully examined by Government Inspector, and got a clean bill of health, also praise for the healthy, clean stock you send out.
WM. JUDGE

Corona, Cal., Jan. 31, 1914.
Gentlemen:
Shipment of 480 XX J. H. HALE peach trees arrived in excellent condition. Passed rigid Horticultural inspection. All very much pleased.
H. G. SALISBURY

Stevison, Cal., Feb. 10, 1914.
Gentlemen: I received the trees in good shape, in fact, in better shape than I can get stock right here. I was ready to plant the day they arrived, and I am certain they will grow, as ground is in best of shape.
S. N. NELSON

Willits, Cal.
Gentlemen:
Our inspector did not open the trees, as he said he was sure all trees coming from the William P. Stark Nurseries were all O. K. He is from Missouri and has been through the William P. Stark Nurseries.
MRS. M. R. MEAD

William P. Stark Nurseries
Box 7J Stark City, Mo.

Vol. LXXXVIII—23 Forty-Fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, December 5, 1914 LOS ANGELES

Better Egg Marketing System.

[Written for PACIFIC RURAL PRESS by Susan Swaysgood, Pomona, Cal.]

We are now getting near the close of the year, and that means we shall soon be thinking of making a new start. In cold countries they get a rest in winter, but here we simply quit doing certain things and start new ones. And that really is the best modern recognition of rest. A change of work rests certain muscles and brain cells and gives activity to those that have had a rest, that is much better than going dormant like the trees do, for a certain length of time. A tree knows when it has had enough rest, but give a man or woman a long rest and they want more and don't really think they should begin work again. Nothing personal, so don't all come back at me please. I include myself to save my skin.

We will commence this month by giving a few technical, or market terms that seem to puzzle some of our readers. On this Los Angeles market we have three grades of fresh eggs, besides pullet eggs. These are termed selected, candled, case count, and pullet eggs. "Selected" are selected first for color, which must be white, second for size and freshness. A case of selected eggs must weigh so much, or they are passed into the grade of candled. This grade must have been candled so that nothing but strictly fresh eggs are contained in the package, and they must also be fair size, but not exactly made to weigh so much. Case count takes them as they come—any color, but they must be fresh and of medium size. Pullet eggs sell for about 5 cents a dozen under case count; and case count is 2 cents under candled, and selected is 2 cents above candled.

This is one of the most flagrant pieces of injustice that we can think of, because the discrimination is made solely on the color. Case count eggs vary in color, and are often quite as large, and sometimes larger, than selected; but because some of them are dark-shelled we must submit to this discrimination.

I say a fresh egg ought to command fresh egg prices. Color does not influence the quality of the eggs at all, neither does it add to the quantity. Selected eggs ought to be graded for freshness and size; then the consumer would know that he is getting what he pays for. There is no need for three grades of eggs, because all eggs should be candled, or how are you going to know they are fresh? An expert can tell the age of an egg in just an instant when he gets it before his searchlight. The air space tells the story and there is no gainsaying it, so why call one grade candled?

Pullet eggs should be sold at same prices as cold storage eggs, then people could take their choice.

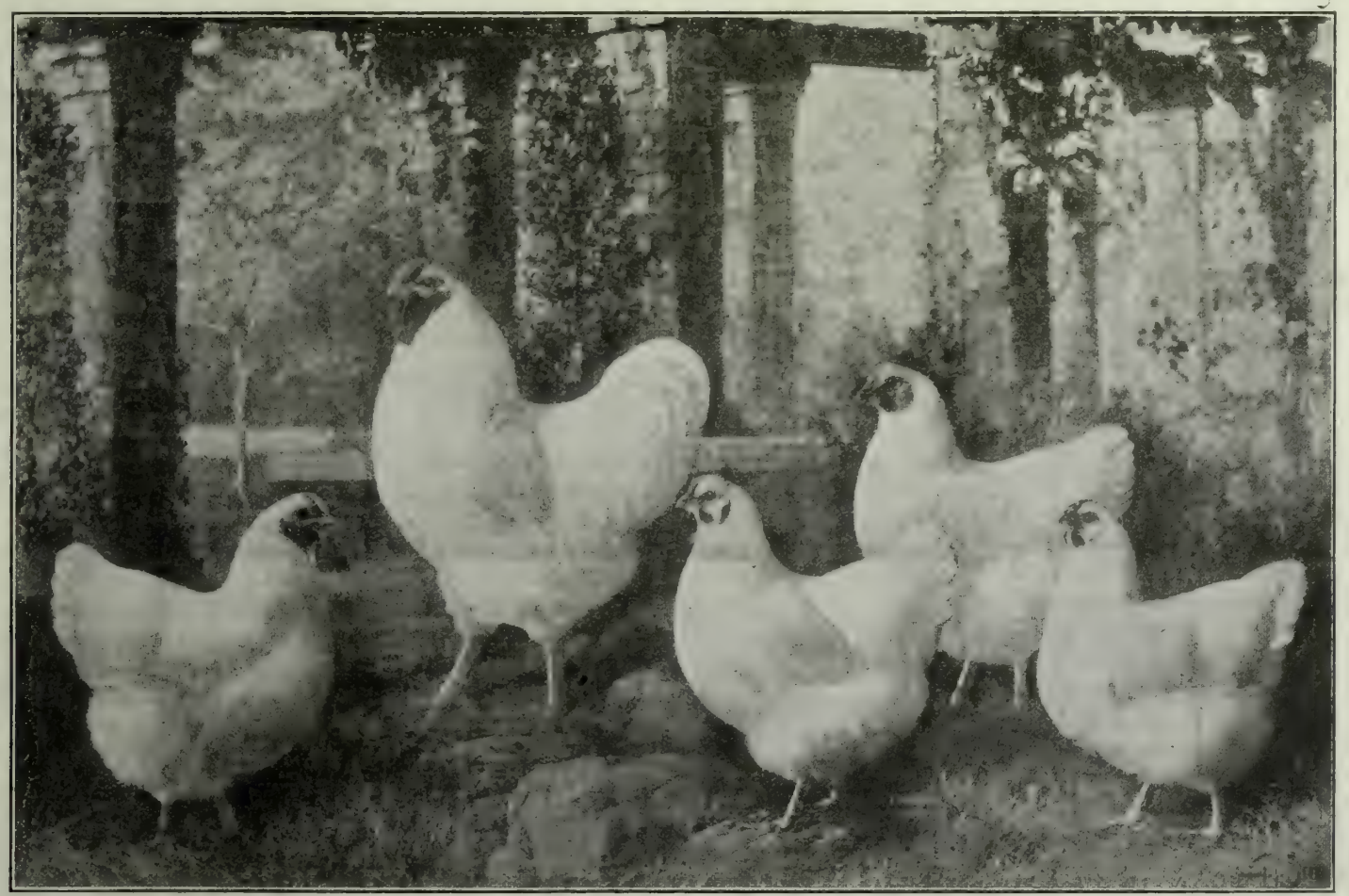
Storage eggs should be branded just as is oleomargarine, and Chinese eggs should be branded too; then the people would not be confused so that they buy one thing when they want something else. I fail to see any gains for the ambiguity in terms, except to those who want to pass one for the other, for profit.

Now this is a case where every consumer, every farmer and every storekeeper would be benefited; then why not set up a howl about it until things are remedied? Why should people keep paying for what they don't get? It is just because it is so much easier to let things drift. As a kid I remember going to the baker's shop for a loaf of bread; it was weighed and a nice little sweet bun was put on as the make-weight. Being a kid, I was always ready for anything like that, and the bun made about two good bites. When I got home mother's first word was, "Did he weigh it?"

"Yes," I answered, "but I ate the make-weight."

Of course that was all right, but if I had not confessed, that

(Continued on page 578.)



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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., December 2, 1914.

Stations.	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Past Week Max'm	Past Week Min'm
Eureka.....	1.37	8.34	9.90	58°	42°
Red Bluff..	.66	2.23	5.74	68	36
Sacramento.	.26	1.34	3.70	68	36
S. Francisco	.58	1.06	4.17	68	44
San Jose...	.92	1.90	3.25	72	32
Fresno.....	.16	.74	2.06	76	32
Indep'nd'nce	.00	.40	2.00	80	22
S. L. Obispo.	.94	1.14	3.57	82	38
Los Angeles	.76	1.25	2.38	86	48
San Diego..	.54	2.44	1.38	80	50

The Week.

The record says that when Elijah went into weather-prophecy that returns came so fast that Ahad had to drive lickety-split to Jezreel to get out of the wet and was only kept from taking cold by the warmth of Jezebel's anger when she found that Elijah had succeeded in getting rain by killing all the weather-fakirs, who were particular pets of hers. It is much that way to the present day. On another page Mr. Blochman has a paragraph calling attention to the fact that Alaska weather is coming right to make good rain for us. Before we could get it into print he had to telephone that the weather had speeded-up the film so that the leisurely saunter of the prophet was made to look like a dead run. And so it comes that in this issue we have the fulfillment on one page and the prophecy on another. But what does that matter if we can cry out as did Elijah: "Get thee up, eat and drink, for there is a sound of abundance of rain!"

Rejoice by Eating Chicken!

To set forth a joyful banquet to celebrate the beginning of the rainy season—for such the present storm seems really to be—we have filled this issue largely with chicken. Whatever may be the professional aspects of the poultry industry which expert writers have depicted upon other pages, the only aspect which appeals to us at this moment is full-bodied, round-thighed, yellow-legged chicken, which was set forth, in all its savor and flavor, in the old farmhouse, back east, when the minister and his family were invited to dinner. We have never succeeded in getting our smelling and tasting machinery completely cleared of that boyhood's impression of the ecstatic in flavors and aromas. It comes to us now as we are calling attention to the particular function of this issue of our journal, which is to throw emphasis upon the industrial and commercial importance of our poultry industry. It seems to us that it has significance not alone for those who take up poultry products as a specialty. They can quickly sense the suggestion, to be found in the high prices of meat from grazing animals, that there is profit to be found by them in the fact that while such meats are so rapidly advancing in price, poultry prices have not materially changed and therefore the attention of stewards and housewives will surely be attracted to the possibility and the advantage of making poultry a staple to be urged upon eaters rather than a luxury to be doled out to them. This will advance poultry prices probably: because there is not supply enough to meet a notably increased consumption—but that is a business matter which has bearings emphasized by other writers in this issue. The question which occurs to us is this. While the market poulterers will naturally give more attention to the "'eavy 'ens" of our cockney cousins, and thus breed for weight and style of flesh rather than almost exclusively for eggs, why is there not also a sharp suggestion for other readers who expect to sell neither fowls nor eggs, but wish to grow fowls for their own tables, to give variety to the home-menu and to save some of the money which now goes to the butcher-wagon? We suppose there is nothing in the world which returns such value from the investment as a small flock of the right kind of hens—unless it be a bunch of pigeons, properly housed for squab-raising. If one keeps just enough fowls to clear up the wholesome house-wastes, in the proper proportion to grain in their diet, there will be a profit of several hundred per cent over all that can be reasonably charged to them for foundation stock, feeding and care. We have tried it for years and know about it. It is like picking up nuggets in the backyard, which some of our readers in the foothills sometimes indulge in. While we are cautious about advising people to go into poultry on a commercial scale without demonstrating their skill, ability and means, we are perfectly reckless about urging readers to graft a small poultry adjunct upon any kind of a rural or suburban outfit whatever All any one needs to start is Mrs. Swaysgood's "California Poultry Practice," which has due regard for amateur activities. Our experience is that a home-flock of fowls is a great agency for saving money, which is the chief factor in making money, and is a great joy to the kid, as well as the old man. If you don't keep a few fowls you do not get half there is in life.

Gold up to Date.

There are some very interesting traditional and historical things about gold, but the most interesting present fact seems to be that gold will go out of fashion in California where it has maintained its style longer than anywhere else in the world, perhaps. And there are some traditional things about gold which, it seems, are not true. We remember reading quite a learned treatise once that the ancients made coin out of gold, although at the same time silver of the same weight was more valuable because the gold would not wear off, but would simply flatten. It was a good enough treatise, like many others have been, until put to the test, and the test, for us, was applied last week when the new Reserve Bank received a large deposit of gold from Portland and would credit only what the gold was worth by weight and not what the stamp on it declared. And so gold will wear off and a man with a pocket full of gold pieces has less and less money each day although he does not spend a cent. This means actually that if you sell a lot of grain for $500, and are paid in gold, you will really not have $500 when you get to the bank, and if your banker follows the present fashion and credits you with only as much as it will give him credit for in the Reserve Bank, you will not sell for gold a great many times, but will seek for paper notes which will not wear out because you can always get new ones in exchange when they get shabby. By this route gold coin promises to go out of circulation, and will take its place in the bank vaults to be drawn upon only when transactions require the real thing and not any sign of it. This will be quite a shock at first to old Californians who remember the Civil War and the refusal to circulate greenbacks in place of coin, and who since that time have felt that they never had any money at all unless they could jingle it. The incoming of the copper cent and the outgoing of the gold piece are two severe shocks to the memories of the pioneers, it is true, but the State will live and grow even more rapidly, in spite of the abandonment of these financial traditions, no doubt. But of course there are some other financial traditions which are more important to abandon, and we hope the Reserve Bank will help us to unloose them also.

What Shall We Do for Horses?

Ever since last August horses have been going to Europe at a frightful rate. Tourists are staying at home and horses are going abroad, and who knows but what we are losing more in working and producing power than formerly. We do not know how many have gone, but on a single day, November 27, we read of five steamers leaving ports all the way from Halifax to New Orleans and carrying in all 5,320 horses for the European armies. If that should keep up as a daily rate we should all have to walk or take to trolleys and automobiles, as we are largely doing anyway, but it would be harder to make this country's crops with hoes or tractors. It was clear enough before the last war that we ought to be growing more horses in this country, and that fact is being emphasized in a way no one could have anticipated. Probably few fully appreciated how shy the other side of the world was on horses—and yet America has been supplying army mounts for European countries for a long time, while we have been importing breeding stock from Europe all the time. It ought to be a pretty clear demonstration that America is a good place to make horses and that our capacity for such a product is beyond all European capacities. The lesson of it seems to us to be that those who have money and suitable lands ought to be stocking up with mares and good sires and that we ought to take to systematic production of horses of acceptable types more freely than ever. Hitherto the horse, except in a

few notable enterprises, has been a by-product of ordinary farming, and though that is a thoroughly rational and desirable thing if proper effort is made for weight and quality, and should be pursued more fully than hitherto, there seems to be more reason than ever to take up the horse as a specialty in production, and given the same investment and provision that are usually given to specialties. And Europe will need horses after the war, probably as sharply as she needs them now, for the horses which will come through will be of little account, and all industries which have been robbed for the army must be re-supplied. The world will be hungry for horses for a long time.

Remember the Grand Trees.

We are much interested in two propositions affecting the coast redwoods which should be freely talked about. One is the effect of the Panama canal upon the movement of redwood from the upper coast landings. J. H. Brown, an expert on redwood, reported to the American Forestry Association, Washington, D. C., last week that the Panama canal will permit the marketing of redwood throughout the world in parcel lots of 25,000 to 100,000 feet; whereas in the past it has been necessary to sell in cargo lots of 1,000,000 or more feet in order to get advantageous freight rates. Mr. Brown thinks the opening of the Panama canal and the completion of the Northwestern Pacific railroad into Humboldt county will mean more to the redwood industry than anything since the manufacture of redwood began. That will be a force in the imminent immense development of that part of the State which has done so well while waiting so patiently for the world's eye.

But redoubled activity in redwood lumbering means, of course, increased cutting of the forest primeval. The redwood restores itself splendidly, but it will take centuries to get such trees as are being cut. Therefore we have a keen interest in a proposition which the Oakland Tribune credits to Charles Willis Ward, who has backed his suggestion by a $25,000 contribution, for the purchase of 20,000 acres of land covered with mighty redwood trees, near the mouth of the Klamath river, for a great public park. The location is on the south side of the stream, surrounded by high mountains, and is an ideal spot. The trees are of the most wonderful growth, some of them being more than thirty feet in diameter and upwards of 300 feet in height. The report is that Congressman Kent has contributed a similar amount with Mr. Ward, and another man in the east has put up a like sum, and the suggestion is that California might vote cash enough to insure the purchase. Surely the State ought to do that much for posterity. The redwood park in Santa Cruz county is all right, but it surely should be complemented by such a grand area at the north, which would fitly preserve the greater phases of our redwood endowment.

Systematic Development Effort.

Present effort for the welcoming of people to California land, which sprang rather sensationally from a wave of popular sympathy for the banished Belgians, seems to be taking a steadier course in the way of aiding to the land our own Americans and foreigners also—providing individually they prove up in character, attention and farming ability. On another page will be found leading parts of an address made by Col. Harris Weinstock at the Los Angeles Fruit Growers' Convention, which passed favorably upon it, as stated in our issue November 21. We had the pleasure of attending a committee meeting of the Development Board last week at which the matter was freely discussed, and the committee will recommend to the Board that it take up energetically the broad plan, indicated above, as thoroughly in harmony with the idea which it was organized to serve. The committee agreed that there is an abundance of land available at a price from which the speculative element has been squeezed out. Forty-seven tracts have already been offered, it was said, at a lower price than could have been secured for other uses for a general colonization scheme such as now proposed. This land will be examined by experts from the University of California to determine its suitability from all points of view. The committee gave its support informally to the chief features of the Weinstock proposition by which a farmer would pay for his farm under a one per cent amortization plan, paying interest not to exceed four per cent, so that when the payments made amount to the principal the debt shall be wiped out. Other meetings for adjustment of details and methods will be held later in the hope of having the undertaking in shape for the coming legislature.

Queries and Replies

Querists must give name and address.

The Future of California Peaches.

To the Editor: I read your article "Shall California Grow More Fruit?" and it certainly seems to me that you overshot the mark. I think you should have confined yourself to the varieties that will stand increased production instead of being so general in your remarks. For instance dried peaches have just about paid the cost of production for the last four years, the price ranging from 5c. to 2½c. for good average fruit. Last fall peaches sold here at 3c. and this year there has been good fruit (peaches) bought at 2½c. Many trees will be dug up because there is nothing left after expenses are paid. I don't think it a square deal to the new-comer to tell him to plant fruit trees without giving him some idea of what kind to plant. You have kept pretty well up on conditions. I will admit, but not so close to the situation as the man that has been trying to make a living out of the business. I have one of the best orchards in Tehama Co., and I know for a certainty that there has not been anything in the way of prices to induce the increase of dried peaches in particular. I have been hoping some one would tell the people who are thinking about planting trees the particular kinds that will stand increase of production. It is easy to figure out how much dried fruit the world needs and should have, but they won't come through and buy the stuff; that is a fact, because there has been a large hold-over of dried peaches for several years back. I hope to hear from you again on the subject.—N. T. Heaton, Jelly.

If we could surely tell which fruit would be most profitable during the next three years what would be the effect of the announcement? It would surely make it least profitable after that, because it would be over-planted. What will be the effect of the low price of peaches which you mention? It will be to induce digging up and reduced planting, and the peach will then become again the best deciduous fruit to grow in proper peach places. Why will this be so? Because increase in production will be checked and consumption will be increased. The term of low prices will induce many more people to eat and learn how good a California dried peach is. The California dried peach is now getting splendidly advertised, and growers are unwillingly paying for it. But the reward for this investment will come later. Just at present we would rather plant peaches than any other fruit if we had good peach soil, good transportation and could get good trees of standard canning and drying varieties. Think about that for awhile.

Of course we are sorry that prices have been so low and have caused growers so much disappointment of late. This fact will inevitably slow down production and therefore we are justified to encourage those who know how to grow good peaches to hold fast and not get rattled. To rush off after some other fruit which some one may have a dream about, will call for new investments and more waiting and all the chances of getting upon a good broad basis of production or not, still to come with that fruit. We cannot find it in our heart to advise such flopping in a large way. Still it is the duty for each one to consider the matter carefully and follow his own convictions based upon the best judgment he can exercise, and we approve that.

It ought to be remembered that the peach is in no worse situation than other fruits have been in nor have they been longer in such straits. The way out with peaches is the same along which other fruits escape. Organize for distribution; organize to see just where the trouble is; organize to get for the grower what the traffic will bear; organize to finance the business. Probably growers are now paying 50 to 100 per cent more interest on the money they need to carry themselves than they should. Do not blame the peach for not doing for you what you should do for it. Be fair with the peach; get real men behind it, and get them together! We hope to have something later about what dried peaches and other dried fruits actually cost the consumer.

Improving Alfalfa Stand.

To the Editor: The tops of my levees are all bare of alfalfa though have a fine stand in between. I have raked and burnt off all the weeds, and now wish to resow them; how shall I do it? Sow the alfalfa broadcast, or drill it in? Can I drill lengthwise of the checks? Would it do any harm to run a renovator over all the alfalfa now, or would you wait until after it has rained more? In some places the alfalfa is rather thin, but nearly all is excellent. Will renovating it help the thin spots?—C. B., Patterson.

If your levees are a little too high and steep a drill will flatten them somewhat and give you a better chance to hold a stand of alfalfa. If the levee is about right we should trust to hand-raking broadcast seed or use a light hand-drill if you have one in good order. The renovator does best work if the soil is lightly moistened so as to work well—if the soil is heavy. On a crusted sandy soil it need not wait for that. We should renovate in February if the soil is in good shape and re-sow the bare spots then—unless you have quite a frosty place. In that case do it later so as not to lose your young seedlings.

Hopeful Marketing Conditions.

[Written for PACIFIC RURAL PRESS]

The past deciduous fruit season has been one that tested our marketing facilities. Over 2600 carloads more of fresh fruit have been sold this season than last, up to the same date. No wonder the men in charge of the marketing organizations have a dread of further plantings and heavier production in the years to come. But it has ever been so.

A fruit growers' convention in times past, by resolution, discouraged further planting. Overproduction has been cried from the housetops, and not always without effect in decreasing production. A few years ago the increased citrus plantings set some people aghast, yet the citrus organization has just marketed as big a crop as in its history, and is all set for several thousand cars more during the season just started than in the one just finished.

In 1894 our fresh deciduous fruit shipments from the State were a trifle over 4,000 cars, last year they were over 13,000 cars. Improvements in marketing facilities made during that time include reduced transportation charges, reduced time in transit, a change from the blind consignment to irresponsible commission merchants, to the handling of fruit on the markets by paid agents of the western growers and shippers. Improvements include reduced freight charges, more dependable service for icing en route, and certain local attempts at standardization of fruits. These results have been largely due to the increased strength of co-operative movements.

That period has also seen a tremendous awakening on the part of the growers to the importance of scientific work, not only on control of pests, but also on maintenance of fertility and control of the weather by frost fighting and weather forecasts. Tangible evidence of this is seen in the growth of the College of Agriculture and the Experiment Stations, the establishment of county and State horticultural commissioners, farm advisers and young people's agricultural clubs.

The problem of disposing of the increasing production grows more intricate and remote as each opportunity is utilized, for that means fewer chances of improvement yet to be seized. Yet, as each achievement is worked into the routine marketing scheme, new ideas for increased efficiency or decreased cost are working themselves into the economy of marketing as production increases. Judging by Californian alertness and ingenuity in the presence of past problems, we may well expect it to to be equal to the problems of the future.

As we write, a great convention has given impetus to two steps which mean a good deal for the future. One is the organization of all the fruit growers into one body for the common weal. The other is the whipping into shape of a proposed State law compelling standardization of fruit packs. The same tendency manifests itself in the daily increasing momentum of the movement among citrus growers to standardize their early shipments to avoid demoralizing the markets for the main crop.

Confidence of eastern dealers and consumers can only be gained by standardization of our fruit and pack, and without that confidence, we cannot hope to increase consumption as our production increases. On the other hand, it is a little more than we can expect of human frailty to always discard imperfect fruit and see it go to waste.

On this account, means of using profitably the discarded imperfect fruit will be the means of bringing about the standardization of fruit shipped east which will in turn result in increased consumption.

This subject of using the by-products has engaged the attention of our scientific men of late until we are now at the beginning of an era of by-products exploitation. Freezing processes for the preservation of apple juice and grape juice in non-alcoholic form and without losing the flavor of the fresh fruit, have been perfected though not yet commercialized. We have just received notice of the perfecting of a method by which orange juice is obtained with the full flavor of the oranges. Loganberry juice has been extracted successfully this season. Jams, marmalades, and syrups are being manufactured from fruits not suitable for shipment, in ways too numerous to follow up. Apricot pits, cherry stems, fig leaves, raisin butter, raisin catsup, etc., are other by-products less well known.

Some growers with more capital or intelligence than their neighbors are solving the problem by reducing the cost of production in one or more of several ways. Spending extra money on the crop for fertilization, cultivation, and irrigation is reducing the cost per package of marketable fruit. Topworking or pulling out the star boarders is reducing the cost of production per tree.

Putting up extra fancy packs at extra expense, is tempting consumers to pay more—but on the other hand, some of the useless expense in packing is going to be done away in the competition of the future. Perhaps a majority of the northwestern cherries go to market in pint berry boxes, 24 per crate, without any individual packing. The 10-pound boxes generally shipped from California have had an enormous amount of labor in laying the cherries side and side and one by one. They sell better that way, but not enough better. In a minute after the box goes to the fruit stand in the east that labor is spoiled by the fingers of the dealer.

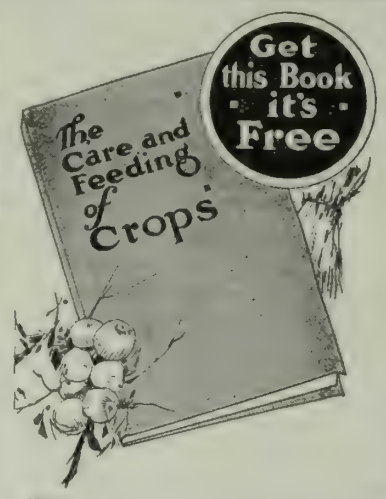
The planting of varieties that do not come in the rush season of other fruits is also helping some fruit growers. The late pears of the Santa Clara Valley and the early fruits of Vaca and Imperial valleys are examples, while the new cling peaches which fill the gap between Tuscans and Phillips show another phase of this.

Improvements in transportation are at hand. Shipment via the Panama Canal on specially constructed refrigerator boats will keep the fruit in better condition per day of journey because it is not so exposed to outside conditions as on a train. Foreign trade in fresh fruits may develop so as to command like service.

The shipping companies are negotiating with the railroads now for the privilege of opening cars in transit to supply the innumerable markets not now using much fruit because they can't take it in car lots at first.

Wells-Fargo has been handling small shipments of dried fruits in a manner very profitable to at least two sections—the Winters district and the Fresno district. And just now we have word that the parcels post may be used for properly labeled sealed packages of dried fruits and nuts.

Increased consumption is being generated by the organizations handling raisins and citrus fruits, by extensive advertising in eastern papers, etc. Packing in family size packages is stimulating the markets for at least one dried fruit company, one raisin company, many individuals, and the organization which handles most of the walnuts.



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Conditions for Citrus Frost

[Written for PACIFIC RURAL PRESS By J. E. Adamson, Pomona.]

From a series of successes and failures in the effort to combat frost damage to our fruits and trees, there is being evolved a more definite knowledge of the causes of frost damage, and of the extent to which fruit may be subjected to low temperatures before damage results.

The grower who hopes to get into close touch with the conditions which exist in the atmosphere at times when frost danger is imminent, should learn to read the weather map, as published by the U. S. Weather Bureau. To the mind unused to the meaning of these maps, they seem to be a mass of crooked, unmeaning lines, which he learns are called isotherms and isobars. A study of these lines and their meaning will, however, lead to the discovery that far from being a cobweb of the imagination, these lines depict the sum of many readings of thermometers (isotherms), and barometers (isobars) covering the entire United States and most of Canada, and form the basis of the predictions of weather for the next thirty-six hours. Only two kinds of weather seem to be of interest to the residents of the citrus districts, those that give rain and those that give frost.

Take the weather map just before a freeze and it will be found that so far as this coast is concerned the isobars will form themselves into two more or less circular areas, one of which will be marked "High" and the other "Low," with the high somewhere in the Northwest, and the low in the Southwest.

This will bring about the conditions just right for frost, but the intensity will depend on the temperature found in the region of the "High" to a very large extent. The isotherms will be found to form circles similar to the isobars, and if a field of low temperature is found in the same general location as the high of the barometer readings there will follow a time of low temperature in the South, corresponding to some extent to that in the Northwest, but tempered by the moderate climate of our Southwest coast.

One of these climatic conditions that tends to moderate frost conditions in the citrus belt, is humidity; and this is one of the elements of frost fighting and frost knowledge which we can use as it comes to us from the hands of nature, but over which we seem to have no control.

The set of conditions described above in regard to the weather map of our coast, tends to bring about a predominance of high and very dry winds, blowing to us from the north and northeast, bringing with them the breath of the frigid region from which they come, and not only cooling our atmosphere, but robbing it of the moisture it holds as well. Taking away this moisture carries with it a large store of heat contained in the water which would have been given up to the warming of the air if the temperature had tried to go down while the moisture was there.

If the air carries enough moisture to cause a deposit of dew at temperatures five degrees or more above the freezing point, there will be little danger of damaging frost that night. The determination of the dew point, or temperature at which dew is deposited, is one of the means at hand by which we can predict the possible minimum temperature of the ensuing night.

With the temperature falling at the rate of one degree per hour after 9 p. m., it will usually be found that the rate will change to three hours per degree and will often become stationary for two hours or more after the dew has settled and before it is turned to ice. For the frost fighter the freezing of the dew should stand as a signal for firing rather than the temperature as shown by the thermometer, because there is no more to be expected of the latent heat of the dew after it has been turned to ice. As long as the trees are dripping with water there is no danger and no need of fire.

Wind is a moderator of temperature, due to the mixing effect it produces as it rolls the air over and prevents any tendency to settle in the dead spots. We used to think the wind was a cure-all for frost, but we know now that it works only if the frost does not last too long. In the big freeze of 1913 the wind blew all right, but there was no warm air to mix with the cold, in fact the upper air was coldest and the mixture had an effect contrary to what we wanted.

The question is often asked, how cold must it get before there is damage to citrus fruit. There would seem to be no direct answer to this, for the reason that so many conditions intervene to change the point at which damage will result. The freezing point of the juice of a mature navel orange is about 28 degrees, there being a difference from the freezing point of water in proportion to the amount of sugar it contains. It is also affected somewhat by the amount of citrus acid in solution. It must not be thought, however, that fruit will freeze when it has been exposed for a short period to air temperatures of 28 degrees, as liquids can stand for long periods exposed to temperatures corresponding to their freezing point. It has been demonstrated that oranges will not freeze until the interior of the orange has been reduced to a temperature of 26 degrees, but once that point has been reached the orange will freeze solid in a few minutes.

The condition which seems to dominate the danger zone in the exposure of oranges to frost, is the temperature of the orange at the time the temperature of the air falls below the danger point. With a warm day preceding a cold night, the temperature of the juice of the orange will lag behind that of the air three or four degrees if the fall is very rapid, and less than that if the fall is more gradual In times of severe freezing conditions there will be very little difference; in fact, fruits in unprotected groves have been known to be frozen solid with the air temperature at 25 degrees.

These are some of the conditions which spell success or failure to the frost fighter. Without sound judgment, fuel may be wasted by firing when not needed, or fruit may be frozen from failure to fire soon enough.

Orchard thermometers should be hung at uniform height from the ground, preferably about five feet. A good plan is to have stakes about that height driven into the ground, painted white so as to make them easy to find in the night. The thermometer should hang clear of the wood to show the real air temperature, and should have a scale easy to read to prevent mis-readings from heating due to holding in the hand too long or having been held too close to a torch. One of the important things to have in mind is not to fool yourself.

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Rootstock for Nuts.

[Written for PACIFIC RURAL PRESS]

The superior prices quoted by the California Walnuts Growers' Ass'n for nuts of known parentage over nuts from seedling trees, leads many who are planting to demand known varieties budded or grafted on other roots. This is as it should be, for the seedling seldom produces as good nuts as the standard varieties, but they cost as much to raise and to handle. It also brings up the question of what roots to use. There are five of these which are, or have been, common, viz., English walnut, Eastern black, California black, royal hybrid, and paradox hybrid. California black may in future be sub-divided into northern and southern.

Oak Fungus.—A factor in deciding which root to use on newly cleared land ,is susceptibility to oak root fungus, to which certain varieties of walnut roots seem practically immune.

Land covered with oak and poison oak in Santa Clara county was cleared and planted to walnuts by Almon Wheeler about six years ago. Since then he asked County Horticultural Commissioner Earle Morris to examine the orchard for oak fungus. The only case found was where the fungus had climbed above the black walnut root and girdled the French variety above the graft. It killed the tree; and hereafter Mr. Wheeler will insist on trees grafted high so that the black walnut root-stock will rise above the ground where the fungus cannot reach the French trunk.

Dr. W. W. Fitzgerald of Stockton has the following to say on this point: "Oak fungus does not affect Eastern or California black roots nor those of the royal hybrid, which is a cross between the two. I have known it to kill walnut trees on English walnut roots. It may affect the paradox hybrid, which is a cross between the English and California black. I am testing this now in soil where English walnuts have been killed. I would hesitate about planting the paradox hybrid, as it is too serious a matter to take a chance of having them killed in 10 or 12 years, for you can plant the royal hybrid root and be positive of having no trouble."

Soil and Moisture.—Dr. Fitzgerald and Mr. Wheeler agree in saying that walnuts in California must have plenty of moisture, which means irrigation in most places. There must also be good drainage, but the royal hybrid and one of its parents, the Eastern black walnut, will grow well where it is too moist for paradox or California black and have surely endured exceptional dryness as noted in a previous issue. Prof. R. E. Smith says: "The English walnut on its own root is very easily injured or killed by lack of moisture, excessive moisture, poor soil, or other unfavorable conditions."

Affinities.—Seeds for the root-stock are sometimes planted in places in the orchard topworked with the variety desired after they are about 3 years old. English and French walnuts topwork or root-graft satisfactorily on any of their own varieties, but very few nurserymen now use English walnut roots. According to Prof. Smith the impression that the Southern California black walnut stock dwarfs the English, is erroneous, and he says that it unites readily and firmly. He has found in experiments on the paradox root that trees on that stock "are invariably lacking in any unusual vigor" when the nuts for the stock came from a hybrid seedling. But grafting on a root from a nut which is itself the result of a black walnut blossom pollenized from English walnuts (the first generation cross) has shown unusual vigor and proportionate crops. Dr. Fitzgerald, however, has found that grafts and buds do not take well on paradox hybrids, having to graft two or three times to get them to grow. These may have been second generation seedlings such as Prof. Smith found unsatisfactory, or it may be that a different method of grafting or budding is required.

Almonds.—Almond root is preferred, though the peach answers well. The apricot root should be avoided. P. D. Bane of Glenn Co., used common almond seedlings twenty years ago, but is now using bitter almonds in the home nursery for his own planting because he believes them hardier on his irrigated heavy soil underlaid by gravel and clay. J. T. Caldwell of San Joaquin county favors bitter almond roots which he has contrasted with peach roots for ten years on his, until recently, unirrigated sandy loam underlaid at about ten feet with clay and shale. His trees on bitter almond are more healthy, have a better root system, and he believes will be longer lived.

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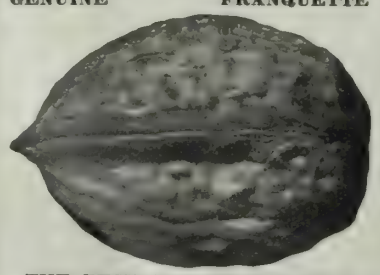

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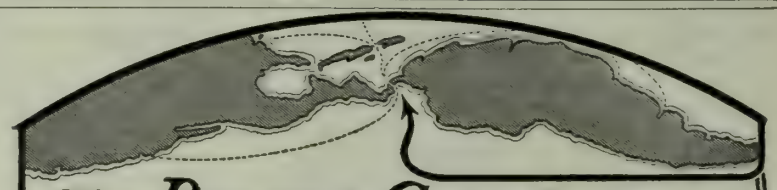

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Increase your acreage. Plant more trees—thrifty Foot-Hill Grown Trees, with their good root systems, hardiness, and freedom from disease—the Silva-Bergtholdt kind.

As to which are the best and most profitable varieties for this new world-wide market, and the wonderful possibilities of this great Opportunity, are discussed thoroughly in our new Catalog and YEAR BOOK

—Send for your copy TO-DAY.

The Silva-Bergtholdt Company

"Fruit Tree Specialists"

P. O. Box B Newcastle, Calif.

SAFETY SUCCESS

Orchard Brand Spray Materials

MADE IN CALIFORNIA

LIME SULPHUR SOLUTION, a clear liquid with high sulphur content free from all sediment.

BORDEAUX MIXTURE, a highly concentrated, uniform, effective preparation, ready for dilution without slaking lime or dissolving bluestone.

OIL SPRAYS for scale insects, thrips, aphis, etc.

ATOMIC SULPHUR, a non-caustic preparation, effective and safe to use during growing season for mildew and other fungus troubles, and for Red Spiders and Mites.

ARSENATE OF LEAD, Paste and Powder, for Codling Moth and other Chewing Insects.

Bulletin No. 3, Dormant Spraying Fruit Trees, together with full information regarding Sprays and proper directions for use, free on application.

General Chemical Company of California

SAN FRANCISCO LOS ANGELES

S. W. Foster, Entomologist

Martinez Nursery

Established 1884

Offers the following varieties in strictly No. 1 Trees:

20,000 BARLETT PEARS

10,000 APPLES (leading varieties)

Large Stocks of ALMONDS and APRICOTS (leading varieties)

also

AUTUMN and WINTER PEAR, PLUM, PRUNE and PEACH TREES, GRAPE VINES, ORNAMENTALS, ETC.

Price List on Application.

THOMAS S. DUANE, Prop.

MARTINEZ, CAL.

BORDEAUX FOR GUMMOSIS.

To the Editor.—Would you please print the proportions of bluestone and lime for painting gum-diseased trees?—F. R C., Uplands.

[See article on citrus gummosis in the issue of Apr. 25, 1914. We commend to all our readers the use of the index printed in the last issues of June and December every year. F. R. C. is excusable, being a new subscriber, so we repeat Prof. Fawcett's recommendation. Let a pound of bluestone (copper sulphate), hang in a sack just below the surface of three quarts of water in a wooden or earthen vessel until it is dissolved. Slack two pounds of lime in about three quarts of water. Mix the dissolved lime and bluestone together when the former has cooled. It makes a light blue mixture the consistency of whitewash. If it turns another color before being applied, something is wrong. Mix fresh each day or two, for the mixed paste tends to deteriorate with age. Larger quantities of lime and bluestone may be prepared and kept separate until needed for use. Apply with whitewash brush.—H.]

FLOWERS SELL POULTRY.

[Written for PACIFIC RURAL PRESS by H. A. Huntington]

"It don't cost as much to grow flowers as to grow weeds." This is one of the favorite maxims of Geo. Alkire of the big Alkire ranch west of Phoenix in the Salt River Valley. And Mr. Alkire doesn't reap any direct financial reward from his flowers, either, for one of the privileges of the many visitors to the big farm is that of picking and carrying away all of the roses and other blossoms that they wish. The banks of the small canals paralleling the driveway and around the homesite are turned into shrubs, and even the storage barn has its rose arbor. Flower lovers who wish to pick the blossoms so generously provided cannot help but see Mr. Alkire's pure flocks of prize winning Red Bourbon turkeys and his thoroughbred geese and peacocks, and in the course of a year the sales of these birds for breeding purposes amounts to several hundred dollars. Thus wholly unintentionally on the part of Mr. Alkire the flowers and other attractions of his place are proving, indirectly, a good financial investment.

ELECTRIC INCUBATORS.

Electric incubators have long been the dream of incubator manufacturers, but they have been until recently using too much electricity. They are now being constructed, however, to use economically either direct or alternating current of the two voltages customarily used for electric lights. It is claimed that they run cheaper than the ones using coal oil. The current is turned on and off automatically with changes in temperature, so that very slight variation is ever found. In one make a little electric lamp burns when the current is on. Its flashing on and off makes a pretty demonstration of the alertness of electricity to correct changes in temperature.

Salway peach trees are being worked over quite generally because they can't compete in the East with Elbertas from Missouri.

Plant Pears for profit. California Bartlett ripen earlier than Eastern and Northwestern grown pears. During their season they monopolize the markets of the United States and Canada.

Silva-Bergtholdt's
FOOT-HILL GROWN PEAR TREES
have strong, hardy root systems, the foundation of all successful trees.

We have a fine block of Bartlett, Comice, Winter Nelis, Anjou and other varieties. Our buds are cut from selected parent trees.
THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
P. O. Box B Newcastle, Cal.

Strawberry Plants

Big bearers, all known producing varieties, only true and tried plants sold. Millions of plants, years of success, large, firm, juicy fruit; every plant guaranteed. Big yields, bear until stopped by freezing.
NEW CATALOGUE FREE
J. A. Bauer 7 Judsonia, Ark.,
Strawberry Specialist--Estab. 1880.

ALMOND TREES
FOR SALE

Seven thousand yearling trees —in three of the best and most hardy varieties—

NONPAREIL—PEERLESS
DRAKE

Budded on bitter almond and peach stock.

The most prolific and profitable varieties. Will sell in any quantity desired—prices quoted upon application. If you want good trees don't delay writing.

T. G. SCHMEISER,
Davis, Calif.

Fruit Growers, Attention!

Having had 14 years' experience in Nursery and Orchard work, I can do all kinds of Rebudding and Grafting. Retopping of Old Orchards. All work guaranteed. Address

W. H. STEWART
Bellflower, California

WALNUTS
Grafted and Top-Budded
. A Leading .
Specialty

We have the only nursery that has made a success of top-budding the walnut, and invite investigation. There is no finer stock in the State, and all of our stock is propagated from known bearing trees. Careful planters will take heed of this. Please write or call.

PEDIGREED FRENCH PRUNES

BLENHEIM APRICOTS. ORNAMENTAL STOCK IN POTS. LANDSCAPE GARDENING A SPECIALTY.

LEONARD COATES NURSERY COMPANY
MORGANHILL, CALIF.

TREES

Get Started Right This Season

The one best way is to have every order directed to the
FANCHER CREEK NURSERIES

We guarantee all nursery stock sold by us to be "True to Name" and you can depend upon your order being filled with best quality trees and shipped in "A1" condition. We have the largest and best stock of trees on the Coast. Our 30 years' experience, immense nurseries and close touch with conditions enable us to know and grow what is best suited for the Coast counties, valleys and foothills regions.

The demand for high-grade nursery stock so far this season is unprecedented, and to avoid disappointment we advise that you write us at once what your probable requirements will be.

All Varieties

Deciduous
Citrus
Ornamental
Palms, Roses
Grape Vines, etc.

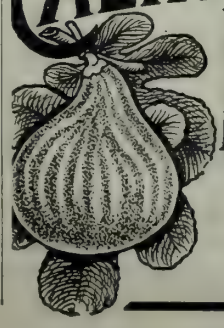
APPLES	APRICOTS	
PEACHES	PEARS	
PLUMS	PRUNES	
LIMES	LEMONS	
ORANGES	GUAVAS	
POMELOS	LOQUATS	FIGS
OLIVES	PECANS	ALMONDS
WALNUTS	CHESTNUTS	RHUBARB

ROEDING TRUE TREES FRESNO, CAL.

No matter how large or how small a quantity of trees, or vines, you may be figuring on setting out this season, you will do well to get in touch with us at once and get our prices and suggestions.

WRITE US TODAY

CALIMYRNA FIGS



This is the celebrated Smyrna Fig of Commerce, introduced and grown by us successfully It is undoubtedly the only fig to plant for shipping, table and drying. Write us for further information. We also have a good stock of the Adriatic types.

Our New 1914-15
Illustrated Price Catalogue
WILL SOON BE READY
If you wish a copy, send us your name and address now and we will see that it is mailed to you as soon as it comes off the press. It will briefly describe and price all the stock grown by us, comprising over 2000 varieties of fruit and ornamental trees, plants, vines, etc.

Send us your list for prices. We will gladly advise with you free of charge and without any obligation on your part.

PAID UP CAPITAL $200,000.00
FANCHER CREEK NURSERIES
GEO C. ROEDING: PRES. AND MGR.
Box 18, Fresno, California

Relative Size in Fumigation.

[By C. W. Woodworth, University of California.]

The measurements now always taken in obtaining the size of fumigation tents are the distance over the top and the circumference. Most tables now in use are incorrectly calculated because equal values have been given to both dimensions.

It will be evident at once that the distance over is changed with a change either in the height or the diameter of the tree, and that, therefore, it is the more important of the two.

The possibility of adding to this dimension an amount dependent on the difference between the two measurements which will indicate the proportionate size of a tent gives us a new and very convenient and accurate method of rating a tree for dosage.

This we will call the "relative size" of the tent. If the proportions of a tent remained constant the distance over could then be taken as the relative size. Since the distance around always equals or exceeds the distance over we may select as standard a tent with these two measurements equal. The amount to be added to this to allow for wider and shorter tents is one-fifth of the difference between the two measurements. Thus a tent 20 x30 would have a relative size of 22 and should have a dose equal to that of a tent 22x22. It will not be necessary to explain here why one-fifth is the correct factor. (See Bulletin 220, Cal. Agr. Exp. Sta., p. 5.)

The adoption of this plan of relative sizes makes it possible to present a table of dosage in an exceedingly simple form, and to make the adjustments for different degrees of leakage also very easy.

relative sizes corresponding with the doses on the following line. The intervals range from 1-3 and the dose intervals from ¼ oz. to 4 oz. This corresponds quite closely with previous tables and with actual practice.

The table in fact will be soon memorized. It will be noticed that the intervals of the upper line just above 10 and 15 are 1 and that other intervals are two except just below 25 and 40 and above 44. The doses corresponding to 10, 20, 30 and 40 are ¾, 2½, 5, 9 and with 64 is 32 oz. The intervals in the dose line are by quarter ounces to 2 half ounces to 5 ounces to 10, two ounces to 20 and four ounces to 40.

The acid and water dose is usually calculated mentally; if to be read from the table cut a card as wide as 5 numbers. Held against the table the two corners will indicate cyanid and water and a line on the card may be drawn to point to the acid dose. Or prepare a card by cutting out a hole or notch wide enough to enclose 5 numbers and have this line to indicate acid as before.

The mental effort in calculating the relative size will not be found to be difficult and is decidedly easier than the process of adding the two figures which is now done in obtaining the distance over.

A few examples will help in understanding the process. A tent 20x30 gives a relative size of 22 (difference 10 giving 2 to add to the 20) and the dose given on the table under 22 is 3 oz. 25x37 gives a dose a little over 27 and the dose of 28, which is 4½ oz., would be correct.

Where the leakage is not .25 per cent or other factors enter into into the calculation, the process is still

DOSAGE TABLE.

OUNCES OF SODIUM CYANID.

Relative Size	64	61	58	56	53	50	47	44	42	40	37	35	32	30	28	26	24	22	20	18	16	15	13	11	10 ft.
Leakage	*			*			*			.25%						*						*			%
	40	36	32	28	24	20	18	16	14	12	10	9	8	7	6	5	4½	4	3½	3	2½	2	1¾	1½	1¼	1	¾	½	¼

Relative size equals distance over the tent plus one for each 5 ft. of difference between the measurements.

Leakage more than .25% is read to the left and if less to the right, one number for each .05% more or less than .25%. Do not fumigate trees smaller than number of feet equal to .00 of leakage. **Holes** produce leakage requiring the use of the next number to the left when equivalent to a triangular tear half as many inches long as relative size and quarter as wide as long.

Stronger dosage for purple scale may be read one or two numbers to the left and
Weaker dosage for black scale one or two numbers to the right.
Acid corresponding with any dose is given 2 numbers to the left and
Water 3 numbers to the left of the acid dose.

In the foregoing table the approximate size of the minimum dose is indicated by asterisks except for .25 per cent, which is printed to emphasize that this table is for that degree of leakage.

The first line of figures gives the

very simple and easy. Thus with a .30 per cent 23x28 tree, the dose would be 4 oz. instead of the 3½ shown in the table on a .25 per cent. leakage.

Taking about the most complicated case—a 20x26 15 per cent tent with rents, amounting to 10 sq. in. determine the weakest dose for black scale. The size would indicate 3 oz. and the dose would have dropped to 2 oz. because of the tight tent, but for the holes, which moves the number to 2½ and finally the weak dose for black scale drops it down two to 1¾, which is correct under those conditions.

If one had in this case a .30 per cent leakage the tent should not be be used because the relative size is less than 30 and efficient fumigation is not to be expected.

There can be no doubt that all these factors should be taken into consideration in fumigation if the best work is to be done and this dosage table may help to remove the difficulties which have hitherto seemed to fumigators to be insurmountable.

Berkeley, November, 1914.

A Tip on Almonds

On this continent Almonds are grown only in California. The American market alone demands *four times* the present supply.

With practically an unlimited home market and a monopoly of the product

Plant Almond Trees if you are seeking a real money-making investment. We have an extra fine lot of trees growing on Bitter Almonds, Peach, and Myrobolan Root, but as there is usually a shortage of trees on Bitter Almond, place your contract immediately—don't delay.

Write Us First

The Silva-Bergtholdt Co.
P. O. Box E Newcastle, Cal.

PLANT THE BEST OLIVE

and other fruit trees---they cost no more.

AN ARMSTRONG TREE HAS VITALITY.

IS SCIENTIFICALLY PREPARED FOR TRANSPLANTING TO THE ORCHARD.—WILL START RIGHT OFF AND GROW.—NO WAITING.—NO DISAPPOINTMENTS.

I want to mail you a free copy of my 1915 combined Planter's Guide, Catalog and Price List. Send name and address and receive this valuable book at once.

SEND ME A LIST OF YOUR REQUIREMENTS AND I WILL QUOTE YOU ATTRACTIVE PRICES.

Armstrong Nurseries

JOHN S. ARMSTRONG, Proprietor
404 North Euclid Ave.

ONTARIO CALIFORNIA

Alfalfa Seed

It pays to be particular when you are purchasing. All the stock we offer for sale has been grown on fields personally inspected by us before they were harvested. We do not grow, nor do we deal in any other kind of seed. Our whole time and attention is devoted to the Alfalfa Seed game.

We can, and do, offer California's best product.

Samples, Prices and any information you may desire will be furnished on request.

V. A. PETERSON ALFALFA SEED CO., Arbuckle, Calif.
The only exclusive Alfalfa Seed dealers in the West.

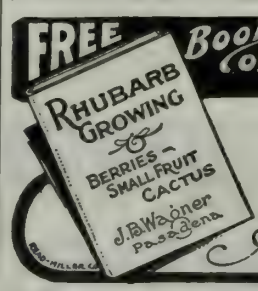
FINEST
Nursery Stock
IN CALIFORNIA

20,000 Valencias, 20,000 Washington navels, 20,000 Eureka lemons, 2,000 seedless grapefruit. All selected buds on sour stock, grown on famous Lemon Heights—Tustin. Finest lot of thrifty, clean trees in California. Must be seen to be appreciated. Write for prices, or telephone for appointment to see trees, to

TUSTIN PACKING CO.

TUSTIN CALIFORNIA

FREE Book on RHUBARB Culture
WRITE FOR IT TODAY —



Now Is the Best Time to Plant
RHUBARB
BERRIES AND SMALL FRUIT.
If planted now, you should derive good results
J. B. WAGNER-Pasadena, Cal.
The Rhubarb-Berry & Cactus Specialist.

Second Hand **PIPE** Screw Casing

ALEXANDER PIPE COMPANY
OFFICE—254 No. Point Street, San Francisco, Cal.—WORKS
1611 E. 6th Street, Los Angeles, Cal.

Nectarines Double Peach Prices.

[Written for PACIFIC RURAL PRESS]

In this season when some of our growers are still holding dried peaches, it is interesting to note the ready market for that cousin of the peach, the fuzzless nectarine, which has long been considered a bud sport of our now low-priced fruit.

Of many varieties grown somewhat in the State, the Stanwick has the highest approval of A. Thiele and Mr. Haycraft in the heavier land of Fresno county. It is no wonder, since the latter sold his 10 acres in a lump to Los Angeles at $35 a ton fresh. Mr. Thiele was offered the same price, but didn't sell his nectarines fresh, for of course there are always more or less that would have to be dried anyway on account of bruises or dropping during the picking. He has only 108 trees about ten years old set about 16 feet apart between the road and the irrigation ditch. From these he dried 3,000 pounds this year and 3½ tons last year. He shakes the trees and picks the fruit from the soft soil, of which none sticks to the smooth skins. He then treats them as he would peaches for drying, keeping the poorer looking ripe ones which fell before time separate. The dried product weighs about one-third more and dries in half the time. To one who has eaten the delicious dried nectarines it is not strange that Mr. Thiele contracted all of his spare crop at 7¼ cents before they were picked, which was rather late in August. They were all smooth, large, even-sized and delicious both dried and fresh.

Part of his crop goes in small packages of 50 to 75 pounds by express every year to several friends and customers around San Francisco Bay One of the near neighbors takes about 500 pounds dried every year.

There is a reason for the demand for Mr. Thiele's nectarines. He dries them on trestles as will be described later, and keeps them clean. He doesn't dry them till they are mature. That means that all the green shade has turned to strawy white. The fruits get red cheeks while still green. If picked too green, they don't sulphur well and then dry up like tasteless white leather.

The properly ripened ones are cut and carefully laid on the trays so that none of the juice spills out of the "cups." This saves a most desirable part of the fruit and keeps the fruit from sticking to the trays by means of spilled syrup, which would make it look nasty and would make the trays insanitary.

If picked too ripe or allowed to lie too long before cutting, they may turn brown around the seed and flatten out ragged. If left too long in the sun they turn brown. But Mr. Thiele has no trouble drying them right. His product is red around the pit when dried and feel somewhat like soft leather. If they slip back and forth between the fingers when tested that way, they need a little more drying as the trays stand in stacks.

Then when the consumer's wife cooks the nectarines, it is not necessary to dip them in boiling water to loosen the fuzzy skin her husband dislikes to eat; for the skin is tender and does not mar the delightful flavor.

Nectarines are mentioned now because we believe every fruit grower ought to have a few.

FIELD GRAFTING BLACK SEEDLINGS.

To the Editor.—Plant black walnuts and then in two or three years graft the trees in the orchard. To plant trees already grafted onto Black Walnut roots in the nursery. —J. F.

[Answered by Dr. W. W. Fitzgerald, Stockton, Cal.]

[The best way to produce a paying orchard of walnuts is to plant nursery grafted trees. Planting black walnut seedlings in orchard form and top grafting later has the disadvantage of planting the nuts in place, namely: That it is impossible to obtain a uniform stand by grafting the first year, and it will probably take three or four years before all the trees have good top, thus making your orchard uneven. Then, too, in top grafting on vigorous roots, the grafts grow very rapidly and thrifty, making them top heavy and easily blown off by the wind, making considerable expense and lots of work to keep your grafts from blowing out. The best way to top graft in the field is to let the seedlings grow a few years until they attain considerable size. Then graft about one-third of the top each year. It will take three years to work your tree over, but you will not have the trouble of them blowing off, and will not shock your tree. It is not much of a shock to a one year old tree to cut it off and graft it, but the older the tree, the more shock it produces to cut off all the top for grafting. When you figure up the time and expense of topworking your trees in the field, they are much more expensive than planting nursery grafted trees. Then, too, the scientific nurseryman does not graft any but his best trees, and then if they do not make a good growth after being grafted in the nursery they are rejected. I know of several, besides myself, who have tried topgrafting in the field as well as planting nursery grafted trees, and I have yet to find the man who has tried this on any large scale who would plant anything but nursery grafted trees. Of course a small percentage of nursery grafted trees that are transplanted will fail to grow, and will have to be replanted the following season. These failures are so few under proper conditions that they are not noticeable in the orchard.]

ORANGE ADVERTISING.

[Written for PACIFIC RURAL PRESS.]

Some of the advertising of the California Fruit Growers' Exchange observed in the New York auction market last spring was six cloth signs each eight feet long and thirty inches high and each set on a separate display of a carload or more of oranges where the buyers couldn't help but see them. In big letters there was painted on them, "THESE ARE THE FAMOUS SUNKIST ORANGES. EVERYBODY EATS THEM." In front of the auction in the auction room staring at the buyers was the sign, 30 inches by 40 inches, "NOW SELLING. BUY SUNKIST. THERE'S MONEY IN THE NAME."

Mermaid Spray Powder

FOR CITRUS AND DECIDUOUS FRUIT TREES

MADE IN CALIFORNIA

ANALYSIS:—Curd Soap, 50 per ct.; Bicarbonate of Soda, 0.5 per ct; Carbonate Soda, 37.5 per ct. Balance Moisture.

SOAP SPRAY—An effective soap spray used in the proportion of one part of powder to six gallons of water with 200-pound pressure. Not harmful to trees or fruit if properly used.

ERADICATES SCALE.

MERMAID SPRAY POWDER will kill this form of pest when applied conscientiously with the above proportions at the right time. You will also note its effectiveness towards reducing red spider while spraying for scale.

COST—A cheaper and purer soap powder that is prepared with accuracy.

UNIFORMITY—Guaranteed to be at all times uniform and without lumps and to dissolve with absolutely no waste, thus saving time and money by not having your spray machine stopped to clean out impurities.

DELIVERY—Promptness is our watchword. Any order placed with the Fruit Growers Supply Company will receive immediate attention.

WRITE US TODAY

We will cheerfully give reference from Professional Sprayers and Growers throughout Southern California who have tried all other Powders and have found MERMAID SPRAY POWDER without an equal. If California can produce the goods —it is up to you. Investigate.

Los Angeles Soap Co.

633 E. First St. Los Angeles | 250-258 Front St. San Francisco

Fruit Trees

ELMER BROS. NURSERY

AT SAN JOSE, CALIF.

The nursery that helped to make Santa Clara Valley famous.

QUALITY IS OUR MOTTO

We propagate all kinds of fruit trees; also grow the best strain of the Franquette Walnut. We make the prices right. Send for our advance price list.

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in each four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500%. At Maryland Ex. Station $1.96½ gave $22.11—over 1000%. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

UNITED STATES PHOSPHATE CO., Salt Lake City, Utah

Write for literature.

"Perfection of fineness in grinding," our motto.

Write for this Nursery Catalog

MISSION AND MANZANILLO OLIVES

Full line of Trees, Plants, Shrubs, Roses, etc. Very finest ornamental stock in California. Unsurpassed packing and shipping facilities. If you anticipate purchasing any kind of nursery stock, by all means write fo our Beautiful FREE Catalog. Full of fine illustrations, and information invaluable to every planter.

CLAREMONT NURSERIES, INC.

1300 Indian Hill Blvd. Claremont, Calif.

Cheap Loans to Farmers.

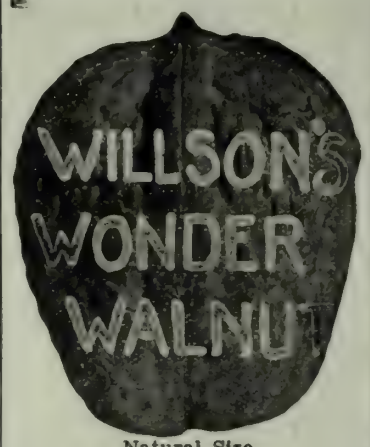
[From Address by Col. Harris Weinstock at Fruit Growers' Convention.]

In a crude and imperfect way we of California have appreciated the importance of breaking up our great bodies of land owned by the few into small parcels, inviting people from all over the world to become farm colonists in our midst. Great fortunes have been expended throughout the nation and elsewhere, inviting people to engage in California agriculture and horticulture, but our methods have been so crude and so unscientific that a very great proportion of those who have been induced to come here and to buy our acreages have failed with great misfortune to themselves and with serious injury to the State.

Failures of the Inexperienced.—Blinded by glittering statements and great promises of future possibilities, many within and without the State were led to invest their little all in such colonization schemes. As a rule they would be called upon to pay down at least twenty per cent of the purchase price, with, say, four or five years' additional time to pay the balance, at a maximum rate of interest. Comparatively few of these purchasers would be scientifically trained farmers or fruit growers. The land for several years would have to yield annually enough to pay about twenty per cent on the purchase price and the maximum rate of interest on the deferred payments, and to afford a living for the colonist and his family, despite the fact that the soil may have proved most inferior; and despite the further fact of lack of experience on the part of the colonist. As a consequence, a frightfully large proportion of such investors have come to grief; have been forced back to the cities, many of them as unskilled laborers, to swell the ranks of the casual unemployed and many of them have cursed the State as a delusion and a snare; have shouted their misfortunes from the housetops, and have thus injured California in the eyes of their sympathizers here and elsewhere.

Australian Way.—Compare this crude, unwise and unscientific method of colonization with the plan followed, for example, by Australasia. The Australasian government made the matter of farm colonization a state affair; in those dominions the State sends its experts out to spy out the land and to buy desirable tracts at the lowest market rates. Such land is then drained, watered and improved, again by experts, at the lowest possible cost, cut up into small parcels and sold to carefully selected colonists who have the body and the brains essential to farming success. In the State of Victoria, Australia, for example, the cash payment required on the land by the State is only three per cent of its sale price, and thirty-one and one-half years are given in which to complete payments, with interest on deferred payments at four and one-half per cent. Besides giving this long term of payment and requiring this low rate of interest, the State builds houses for the settlers, on cash payments, for about a quarter of the cost, the remaining payments being allowed to extend over twenty years, with interest at five per cent. Furthermore, the State details expert graduates from its agricultural colleges to settle among the colonists and to play the part of teacher, friend, guide and instructor, all with a view to taking the inexperienced by the hand and teaching them as speedily as possible scientific farming. As a result of this wise, beneficent and scientific method, Australasia is rapidly becoming an object lesson to the world in successful farm colonization, adding greatly to the wealth of the State and to the prosperity and the well-being of its people. The Australasian dominions, to finance these schemes, issue State bonds, and by virtue of the high credit enjoyed by those countries, are enabled to borrow in the world's markets at the lowest current rate of interest.

American Relief.—As a result of the European investigations made by the American Commission last year, a bill has been introduced in Congress providing for a federal system of rural credits. If this bill should



Natural Size

Greatest Walnut in Existence

Earliest Heavy Bearer

Customer on investigating trip says:

"You certainly can show more crop on trees than any of them. Your nursery trees are the best I've seen anywhere."

All trees grafted on Cal. Black
Stock limited
Write for circular with prices.

Encinal Nurseries
Sunnyvale, Santa Clara Co., Cal.

MANURE
Carload Lots
HORSE, COW or SHEEP
Fresh or Well Rotted.
Call or write
PACIFIC MANURE & FERTILIZING CO.
429 Davis St. San Francisco

Blake, Moffitt & Towne

Dealers In PAPER
37 FIRST STREET, SAN FRANCISCO.
Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Oregon

Cherry Trees

Cherries are the first, the most attractive and the best fruit of the summer season. This, together with the fact that they are very profitable, yielding from $400 to $600 an acre, makes them a good "buy" for any fruit grower in position to raise them.

Our block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.

THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
P. O. Box Newcastle, Cal.

Tulare County
LAND
FOR RENT

Any part of 3 sections good, productive land with water, between Pixley and Spa. Only 3 miles from 2 railroads. All plowed and harrowed, ready for seeding. Heavily manured. Has been fallowed over year. Used several years as stock ranch. If seeded now to grain or sugar beets, should yield heavy crops. Will rent on crop basis or otherwise.

R. C. FAIRALL,
Pixley, Tulare Co., Calif.
or,
R. SCHIFFMAN,
320 Chamber of Commerce Bldg., Pasadena, Calif.

IRIS

Price list describing over 200 species and varieties mailed free upon request. Upon receipt of 15 cents in stamps we will mail you copy of our new illustrated Catalog. Color plate alone is worth the price.
THE DEAN IRIS GARDENS,
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LIME FOR LAND

HYDRATED LIME AND GROUND CARBONATE (LIMESTONE)
See University of California Circular No. 111—One Ton Hydrate equals 2 Tons Carbonate
PACIFIC LIME AND PLASTER CO.,
807 MONADNOCK BLDG. SAN FRANCISCO, CAL.

Maxwell's Nurseries, Napa, Cal.

New booking orders for all varieties of nursery stock for next season's delivery.
French, Imperial, Sugar and Standard Prunes on All Roots.
Apricots, Bartlett Pear, Cherry, Peach, Apple, Etc.
FIRST CLASS STOCK TRUE TO NAME.

Kirkman Nurseries
RELIABLE TREES AND VINES

We again solicit the fruit tree and vine orders of the planters of the West, knowing that nothing but the **Best** will satisfy the experienced buyer. Twenty-eight years of successful nursery business has proven the quality of

KIRKMAN TREES

and the treatment Kirkman accords his customers. Our steadily growing patronage has demanded that we grow more stock each year, until we now have more than **five million** trees and vines growing in our nursery plants in California and Arizona. A considerable portion of the stock in our nurseries, which will be ready for delivery this coming winter and spring, is already sold to early customers, but we still have a complete stock of all varieties of fruit trees and vines, as well as a general assortment of **ORNAMENTAL** and **SHADE** trees, etc, etc. What are you going to plant? We have it, without doubt, in large or small quantities. Illustrated price catalog on application. Please mention what varieties you are expecting to use.

KIRKMAN NURSERIES, P. O. BOX 604, FRESNO, CALIF.

pass it will be efficient, but it would seem to me that, as far as California is concerned, it is not sufficient.

State Aid.—President Benjamin Ide Wheeler, of the University of California, has appointed a commission consisting of leading members of the faculty of the university, with Dr. David Barrows as chairman, which, during the past several months, has been earnestly at work preparing a legislative measure, to be submitted at the next session of the California Legislature, which will provide for a system of State colonization and State rural credits. Roughly speaking, the thought in mind is to adapt the Australasian methods, as nearly as possible, to California conditions, and to make it possible for the State (using perhaps, as its agency, the University), to buy the necessary parcels of land, improve them, build modern cottages on them, sell them to carefully selected colonists possessing the necessary body and brains, calling for a minimum cash payment, and allowing them, say, thirty years' time in which to pay the balance, in annual installments of, say, one per cent on the principal, charging these colonists the same rate of interest that the State itself will pay in the world markets, plus, say, a half of one per cent for administration, and again following the Australasian system, providing the colonists with scientific agricultural instructors who are to live in their midst, and who are to give them practical agricultural training on their own farms.

Land Mortgage Bonds.—In addition to this plan for State colonization a system of land mortgage bonds may be worked out along the lines of the European system of rural credits. Farmers could organize among themselves a Farmers' Credit Association. Such an association, as in Europe, could issue mortgages on their land, say fifty per cent of the valuation, and against these mortgages the amortization bonds could be issued for a period of thirty years. These amortization bonds would be made purchasable by the State, using the idle moneys found in the city, county and State treasuries, only a portion of which at best is now earning two per cent a year and a large portion of which is earning nothing. Or, as in England, the State could sell such bonds in the open market.

Nor would it be necessary for the State to buy all of such amortization land bonds. The moment the State itself indorses such bonds by becoming a purchaser, these bonds will command universal confidence and, as in Europe, will be bought by States, by trust funds, insurance companies and other fiduciary institutions.

No Pit

is required with the

Krogh Deep Well Turbine Pumps

For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

Krogh Manufacturing Company

SAN FRANCISCO, CAL.
Branch at
LOS ANGELES, CAL.

If in Doubt—Plant Prune Trees

The demand for Prunes is constantly increasing and California must supply this demand. With a cheap water rate thru to the Eastern states, giving California growers control of this market, prune trees become

Staple Money-Makers

In the export market they compete successfully with European grown varieties.

Our parent trees of French, Imperial, Sugar and Robe de Sargent have been carefully selected from trees having the best record of QUALITY, PRODUCTIVENESS AND SIZE OF FRUIT.

WRITE US FIRST

The Silva-Bergtholdt Co.
P. O. Box B Newcastle, Cal.

Scalefoe Kills

Scale on Trees, Shrubs and Bushes
also
The Red Spider and other Insects, Worms and Bugs
Does Not Hurt the Plant or Tree
Quart, 20 cts. 2 Quart, 35 cts. Gallon, 50 cts.
5-Gallon Can $2.00, freight paid
Special prices by the barrel.
Correspondence solicited

West Coast Seed House
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TREES

Grown on Russian River Sandy Loam soil without irrigation are best for several reasons. Our prices are right too, subject to approval. Write for price list.

MILLER & COBB
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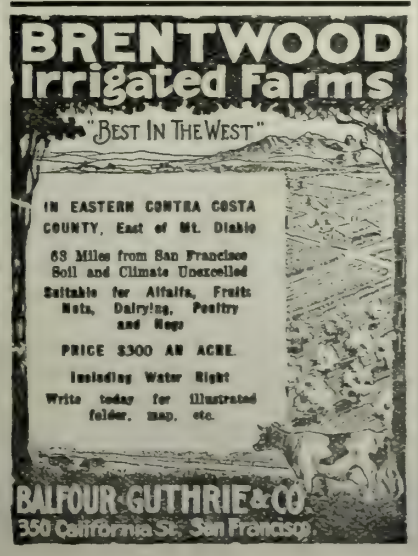
BRENTWOOD Irrigated Farms

"BEST IN THE WEST"



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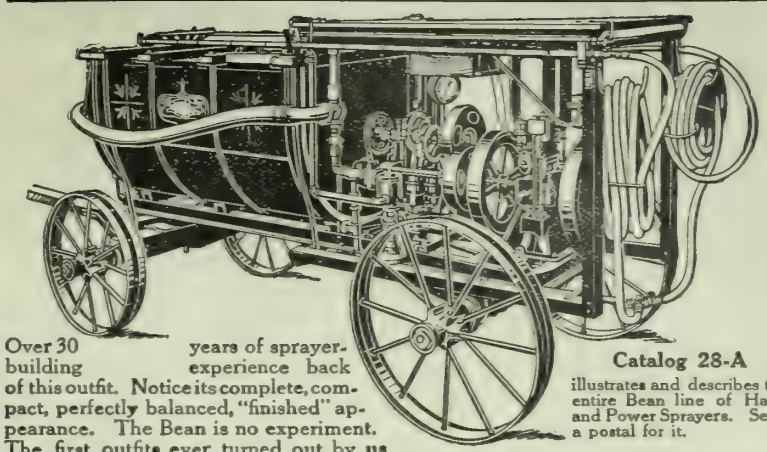
350 California St. San Francisco



Over 30 years of sprayer-building experience back of this outfit. Notice its complete, compact, perfectly balanced, "finished" appearance. The Bean is no experiment. The first outfits ever turned out by us are doing good service today. From the very start we have built quality into

Catalog 28-A
illustrates and describes the entire Bean line of Hand and Power Sprayers. Send a postal for it.

Bean Power Sprayers

They're made complete under one roof—with the exception of the Novo engine—and we use the Novo because we couldn't build a better sprayer engine ourselves. Bean Power Sprayers are thoroughly high grade in every detail—including Bean Rustless Ball Valves, Bean Patented Pressure Regulator, Bean Porcelain-lined Cylinders, and many other advantages. Five sizes—from our wonderful little one-man, one-horse, one-line-of hose Midget to our great powerful four-line Giant. Send for our catalog and study the Bean. It's live reading for any grower.

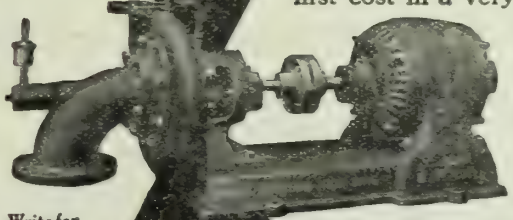
THE BEAN IS THE BEST

BEAN SPRAY PUMP CO.
211 JULIAN ST., SAN JOSE, CAL.
Also Lansing, Mich.

Deliveries made from centrally located agencies in all fruit sections.

"Jackson MADE"

The pump you buy should raise the maximum quantity at the lowest cost per gallon, run constantly without repairs and with the minimum attention. "Jackson-Made" Pumps not only do this, but they are Self Payers because their saving in power and repairs will pay their first cost in a very few months.



There is a "Jackson-Made" Pump that will do the work you require at lower cost than other makes.

Write for Catalog No. 47A

Write us, tell us your pumping problem—our expert engineers, without cost to you, will help you.

A Better Make Not Made

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Beautify California For 1915

Sow that vacant lot with California Wild Flowers Seeds and show our visitors something typical of our Golden State. My pamphlet, "How to Beautify Your Town and County for 1915," mailed free upon application.

THEODORE PAYNE
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CITRUS HEIGHTS NURSERY
SACRAMENTO, CAL.
We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

GYPSUM LAND PLASTER

Gypsum neutralizes alkali; Cures Gum disease, root rot, variegated leaf; mellows gumbo soils; binds sandy soils.

WRITE FOR BOOKLET "LIMING OF SOILS"

CONSOLIDATED PACIFIC CEMENT PLASTER CO.
611 San Fernando Bldg., Los Angeles, Calif.

Mechanical Power on the Farm.

FAST LITTLE ORCHARD TRACTORS.

[Written for PACIFIC RURAL PRESS]

The growing interest in the tractor as an adjunct to the orchard equipment was evidenced at the tractor exhibit on the grounds of the Fruit Growers' Convention at Los Angeles.

Several tractors are offered the orchardist, but there seems to be no uniformity of type. No doubt each of these engines has some work in which it will shine, but with this the present paper has nothing to do. It is not our intention to present to our readers any boost for any particular type, but rather to offer some suggestions as to the requirements for an orchard tractor, leaving the rest to the good sense of the orchardist.

The tractor suitable for the general use of the orchardist owning 50 acres or less, will be a machine capable of performing all the work formerly done by the work horses. Not necessarily much more work, but as much and a little better and at less cost. The cost of operation, including upkeep and interest on the investment, must not be seriously more than that of the same working factor in horses.

An engine that is eminently successful in the handling of the large farm work of the grain grower may be a dismal failure in the varied work of the orchard. In the large open fields of the grain grower the power of the engine may be increased, and tools added to facilitate the work, there being no limit to the width of the working unit except the complications of the tool itself. In the orchard the width of the working unit is limited by the setting of the trees and there is no need for the larger engines; besides, the size of the operation will not permit an investment very much greater than that called for by the horses needed for the thorough working of the land. A tractor can be produced to do the work of a given team of horses which will not weigh much more, if any, than the team.

Such an engine will cost about 30 cents per pound, which will be more than the team, but the feed and depreciation will be much less if the work done is not in excess of that done by the horses.

Use for Hauling, Too.—The desirable tractor must not be limited to the slow work of the plow or cultivater, but should be able to haul the produce out and the fertilizer in, a little quicker and a little cheaper than would be done by the team. This will call for at least a three-speed machine the speeds ranging from 1 1-2 miles to 6 miles per hour with an intermediate speed of about 3 miles. These speeds are of course variable to some extent by the speed of the engine, but are desirable speeds for orchard and road work, the lowest being a speed that will give good work with the plow or disc harrow; the medium may be used for furrowing if the soil is in good order, while the higher speed is as fast as can be taken comfortably by a machine as rigid as the tractor, and will get you there and back quicker than any team can go and stand the work.

The tools for the tractor must of necessity be somewhat special, as the mode of hauling is different. So far as possible they should be a part of the machine itself; no one would think of having a driver for a team of horses and a man riding on the tools to operate them, as seems to be the case where the standard horse-drawn tools are hooked on to the tractor. There is no reason why the usual beam of the cultivator should not be placed directly on the tractor, thereby bringing the operation in the easy reach of the driver. I have been told by tractor people that it will not work, but the answer to this is that it does work. This arrangement allows the machine to turn in close places, and to back into corners that cannot be reached otherwise.

Hauling of fruit or other goods entering into the work of the orchard is best accomplished by the use of two or more wagons, hooked tandem by short poles. This arrangement allows the maximum load on the road on the high speed and the ability to go onto the soft ground of the orchard without trouble, by dropping the trail wagon. We have a tractor weighing less than 2500 pounds equipped with a 20 h. p. four cylinder motor that takes 4 tons loaded on two wagons at five to six mile gait at a fuel cost of one cent per ton mile, hauling the load up a slight grade on oiled dirt roads, returning empty.

It would seem to the writer that the growers are asking too much in the way of a tractor. Their requirements would call for a machine capable of doing the work of eight or ten horses, and no one would think of working so many horses in an orchard.

The average grower owning 50 acres or less generally has horses weighing about 1400 lbs. each, and a 20 h. p tractor will do more and better work than any two such horses can hope to do.

The application of the tractor to the work of the orchard, will call for some changes in operating methods, not of a serious nature but just some of the little things which will appear to the thinking driver. Some changes in the form of trees at the ends of rows, allowing easy turns without dragging into the trees. Open ditches will be found a nuisance and will be done away, putting underground conducts in their place.

No Flies.—One great boon which comes to the average orchard home with the advent of the tractor will be found in the cutting down of the fly plague. Another will be the saving in care and cost after the cover crop is planted. The engine is put in the barn, where, after it has been cleaned up and left in good order, it can lie at rest until fruit hauling and spring work call for its help.

The stall room for the tractor will be less than that required for the horses it displaces and the feed storage is almost nothing as the tank for the fuel supply may best be placed under the ground.

Don't forget that a heavy machine will require a good deal of power to propel it through soft ground such as the average well-tilled orchard. There would seem to be a big field for the orchard tractor, but the perfect machine will have to come by the co-operation of the designer and the user; in the meantime don't expect too much perfection.

SUPPLYING POWER SPRAYERS.

One would hardly hire a highly skilled pruner or grafter or packer and set him to work at common labor that anyone could do. Yet many farmers will drive back and forth from orchard to house with a power sprayer to fill it.

For this, there is no need of using a high-priced power sprayer at a time when all the work should be done within certain dates, to take the place of a few barrels or a tank on a common wagon. This is true usually whether small or large orchards are being sprayed, since very little extra capital is required for tank or barrels.

On a large ranch in Tulare county managed by Harry Postlethwaite, two Bean power sprayers are used, each keeping two nozzle men busy on trees 16 to 20 feet tall. Gas engines furnish over 200 pounds air pressure. When the spray tank is empted it is taken to the nearest driveway where the supply tank awaits it, the spray material having been mixed by the driver of the supply tank while waiting. The gas engine on the sprayer is switched onto a pump which fills the spraytank from the supply tank, and very little time is wasted refilling. If much time were lost it would mean a big waste, for two nozzle men, a driver, and a pair of mules are waiting.

The outfit requires three drivers, four nozzle men, an inspector who insists on thorough work, and six mules. Use of the supply tank enables the whole outfit to keep busy each man and machine at the special work for which intended.

HORSEPOWER FOR HAULING

No gas tractor will pull the same number of plows in all soils, but on land suitable for wheat or oats a 14-inch plow running 4 to 5 inches deep will usually require a draw-bar pull in stubble of 375 to 575 pounds. At a speed of 2 1-2 miles per hour it will take 3 to 4 actual draw-bar horse power to pull each 14-inch plow. One manufacturer of engine plows states that a 14-inch plow running in stubble 6 inches deep requires 410 pounds draw-bar pull to move it. Under average conditions for each ton loaded in wagons 300 pounds of draw-bar pull is a safe estimate for country roads with the average grades found in a reasonably level country.

It requires about one horsepower to propel every 1000 pounds of tractor weight, or 10 to 15 per cent of the power it develops. If the ground is soft so the wheels sink in deeply it may use one-fourth of its power. Besides this, even with the finest cut gears, from 10 to 15 per cent of the power is lost with each reduction, aside from the loss in bearings. Under average conditions about two-thirds, or 66 per cent, of the power developed at the crank shaft of engine is available at the draw-bar; under ideal conditions 85 per cent may be thus delivered.

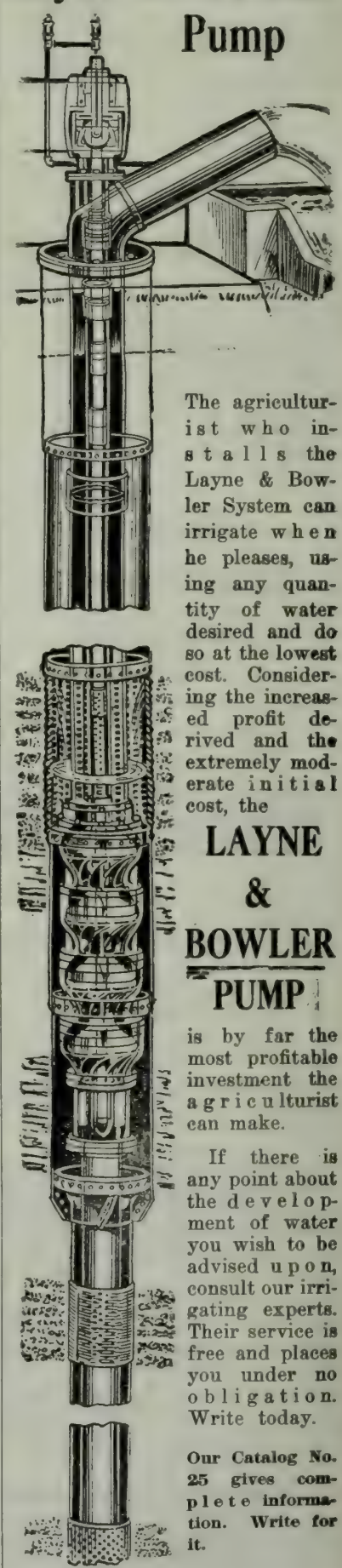
It takes a pull equal to 10 per cent of the weight of an object to pull it up a grade of 1 in 19; a pull equal to 15 per cent of the object to pull it up a grade of 1 1-2 in 10, etc.

BE INDEPENDENT OF DRY SEASONS

Raise Bigger Crops. Make Larger Profits.

PRODUCE CHEAPER WATER BY INSTLLING THE

Layne & Bowler Pump



The agriculturist who installs the Layne & Bowler System can irrigate when he pleases, using any quantity of water desired and do so at the lowest cost. Considering the increased profit derived and the extremely moderate initial cost, the

LAYNE & BOWLER PUMP

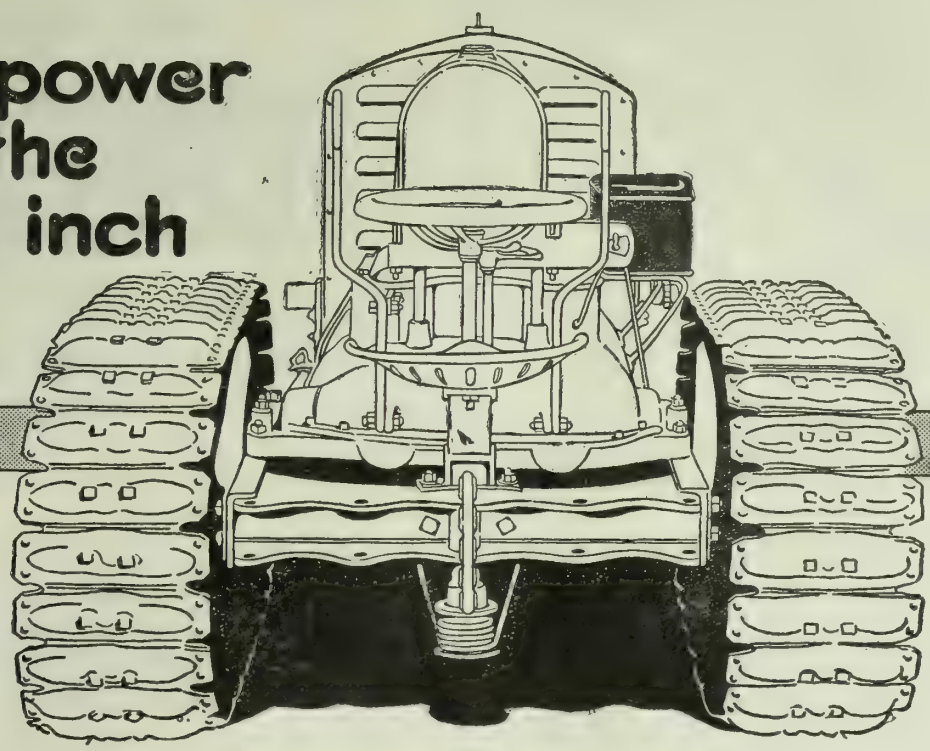
is by far the most profitable investment the agriculturist can make.

If there is any point about the development of water you wish to be advised upon, consult our irrigating experts. Their service is free and places you under no obligation. Write today.

Our Catalog No. 25 gives complete information. Write for it.

Layne & Bowler Corporation
900-910 Santa Fe Ave.,
Los Angeles, Cal.

more power to the cubic inch



To the builders of the first water wheel, the first steam engine, the first electric motor, and the first gas engine, power meant bulk.

Users demanded "more power to the cubic inch of mechanism."

The original inventions were refined, improved, boiled down. The huge water wheel is replaced by the turbine. Watt's crude engine has developed into the steam turbine. The electric motor has been lightened and compressed. The cumbersome gas engine of the old days has become an aeroplane motor—the highest example of a compact, light-weight power-plant.

THE YUBA BALL TREAD TRACTOR

The modern farmer demands that his power producers be less bulky, more powerful, cheaper to operate and maintain.

To meet these demands, we have developed and built The Yuba Ball Tread Tractor. It gives "more power to the cubic inch."

There is a booklet describing it.

THE YUBA CONSTRUCTION CO.

433 California Street, San Francisco

Dept. C-9

Works, Marysville

Agricultural Review

CITRUS AND SEMI-TROPICAL.

Fruit growers in the vicinity of Campbell, Santa Clara county, are preparing to irrigate their orchards this year.

Pruning of both deciduous trees and grapes is well under way in Sutter county, according to reports from that county, as the weather has been very favorable.

The almond growers' exchange of San Joaquin county have commenced shipping nuts from their warehouses at Lodi at prices ranging from 15 to 20 cents a pound.

The cannery at Selma almost doubled its output this year over that of former years. Included in the list of products canned this year were tomatoes, pears, apricots, seedless grapes, sweet potatoes, pumpkins and olives.

For the past three weeks there has been considerable activity in the dried fruit market in the Santa Rosa district, reports from there stating that just recently 200 tons of prunes have been sold at prices ranging between 5¼ and 5½ cents Sales of prunes were reported at the San Jose grange last week at 5¾ cents a pound.

A meeting was held at Fresno last week, at which time a plan of forming fruit exchanges in much the same manner as irrigation districts are formed, was talked of. It was decided, however, to first consider the forming of a cured-fruit association along similar lines to that of the Associated Raisin company, in view of its success to date.

J. F. Butler of Fresno county has five Chinese persimmon trees on his ranch which have just come into bearing. The fruit is larger than either the Japanese date persimmon or the American variety and are also quite different in form. The Chinese variety grows with a ridge girdle that may zigzag as it belts the fruit and is flat or shaped somewhat like the round squash.

The next meeting of the State Fruit Growers' Association will be held at Stanford University the last week in July. An interesting and instructive program is being mapped out and the fact that there will be many prominent horticulturists here at that time in attendance at the Panama-Pacific Exposition should lend much to the convention. The last day will be spent at the Exposition and will be known as Horticulture Day at the fair.

Over half a million dollars has been received by walnut growers in the Whittier section this year according to advices from that place. Of this amount $300,000 was paid by the Whittier Walnut Growers' association, which shipped 90 carloads. The La Habra association shipped 25 carloads, for which they received $100,000, and more than $100,000 went to the Los Nietos and Ranchito associations. The yield there this year was only about 70 per cent of a full crop, but the high prices prevailing made the total receipts larger than ever before.

DECIDUOUS FRUITS AND NUTS.

The Curtis Olive company at Bloomfield, Riverside county, have pickled upwards of 600 tons of olives this season besides making a large amount of oil.

The records for orange shipments from Lindsay were broken one day last week when 75 carloads of navels left that place. The former record had been 68 cars.

The fumigation of citrus orchards in Tulare county was stopped for the season last week, and according to Horticultural Commissioner Collins the operations were successful in every way.

Superintendent Clark of the Edison orange groves near Bakesfield is authority for the statement that pomelos will do well in that section and now regrets that his company did not plant a part of their acreage to that fruit.

The directors of the National Orange Show to be held at San Bernardino in February, have decided to have their exhibits among real orange trees which will be laden with ripe oranges. Other features are also being worked out in an attempt to make the next show the most attractive ever held.

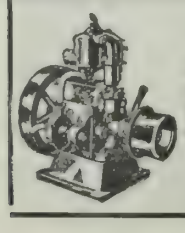
It is estimated that fully 600 cars of oranges will be shipped from northern California this year, 200 of these being from Butte county points. Shipping is brisk in that part of the state and reports from the east say that these shipments will probably have a good reception, as Florida oranges that are reaching the market are immature.

Reports from Tulare county are to the effect that the orange crop there for the year will be about 5,500 carloads as compared to 5,800 cars last year, the difference being due to a slight decrease in Valencia shipments for the year. The navel crop is said to be of exceptionally fine quality and the new government regulation has practically eliminated the shipping of green or immature fruit.

GRAPE HAPPENINGS.

In a letter received at this office Frank Henry of Sanger writes that he has perfected a process of making jelly from Muscat grape juice. He says that it is a very simple matter to make the jelly and that it can be sold to dealers at seven cents a glass and allow the maker a good profit. If this can be done it should furnish an excellent market for the by-products of vineyards where raisins are the chief crop sold.

According to advices from San Joaquin county the total money received by vineyardists there this year for grapes, both table and wine, was over two million dollars. Some of the Tokay growers claimed that they cleared more money out of their culls and strippings, which were sold to the wineries, than they did out of the grapes that they packed and sent east, on account of the poor prices received for the latter kinds.



CUSHMAN
Gasoline Engine
for all purposes. The 4-cycle, 4-H. P. only weighs 190 lbs. This is a no-trouble engine. Made in sizes from 4 to 25 H. P.
Write for Catalog
Light Weight
THOMAS R. BROWNE,
Stockton, Cal.

Read What This Farmer

Says About

Dairyland FARMS

Where every settler is sure of an abundant supply of water.

Chowchilla, October 30, 1914.

Messrs. Stine & Kendrick,
San Francisco, California.

Gentlemen:

I have farmed in Lake County and San Diego County, and am fairly familiar with farming conditions in the whole State, so I bought my farm at Dairyland with a full knowledge of its advantages as compared with those elsewhere in California. One thing I want so say is that the soil works up here easier than any I ever saw. I planted my alfalfa in July this year and it germinated soon after. I cut the first growth in a couple of months to force the plants. Now the alfalfa is about ready for a cutting for crop.

The neighbors about tell me that I have one of the finest stands of alfalfa they ever saw. As to water conditions I consider them ideal. I have a 70-foot well, five-inch pump and 12 horse-power engine that is delivering about 800 gallons a minute, sufficient to irrigate 40 acres of alfalfa, or 80 acres of many other crops. After eleven hours continuous pumping I could not lower the water below 18 feet.

Coming from Lake County, I planted some Clear Lake Beans to satisfy myself on this question. I have picked the vines four times, and judge from the amount gathered, would say that the crop will average two tons to the acre. I believe that most of the crops of California will grow well here as we have the soil, the water and the climate. To anyone interested in a California farm, I will state that Dairyland offers everything the farmer could wish for.

Yours truly,

H. E. Blacow

Mr. Blacow showing vine of Clear Lake Beans.

DAIRYLAND is the Great Chowchilla Rancho subdivided into small farms of 20, 30, 40 and 60 acres. It is midway between the towns of Merced and Madera on the main valley line of the Southern Pacific. Dairyland is in the center of the San Joaquin Valley "Butter Belt."

10 Years to Pay

Let the crops do it

PRICES ABOUT $100 AN ACRE

Send the coupon—let us tell you more about the soil, water, climate and transportation facilities at **Dairyland.**

Cut out.
Mail today.

STINE & KENDRICK, 23 Montgomery St., San Francisco.
Gentlemen: Please send (without obligation to me) descriptive and illustrated literature on "Dairyland Farms." I am interested in the crops as checked below (X) and would like your special Bulletin on the subject.

ALFALFA	MELONS	FIGS
DAIRYING	SWEET POTATOES	GRAPES
HOGS	TOMATOES	PEACHES .

Name .....
Town.....State.....
Send me price and terms on.....acres. PRP

STINE & KENDRICK

23 MONTGOMERY ST. SAN FRANCISCO

An average price of $1,529 per car was received for 15 carloads of Emperor grapes shipped from Fresno county last week. The cars averaged 945 crates, which brought the average price received up to $1.62 a crate. It is reported that the recent cool weather did very little damage to the crop still on the vines. at that time. About half of the Emperor crop was packed in sawdust this year, which amounted to between 600 and 700 carloads.

PROSPECTS FOR RAIN.

To the Editor: Your readers and all farmers are anxious to know weather conditions to date and of course prospects ahead. Some two weeks ago we forecasted that with the unusual warm weather for this time of the year in Alaska we would not get any rainstorms this month of November, and it might be sometime into the next, before rains—not showerlets—would come as far south as the Bay.

It is getting a little colder in Eastern Alaska, at Tanana and Eagle, as if the cold was beginning to move from the Atlantic side; while at Nome, on Behring Sea, a temperature of 20 degrees above is reported, the same as at Winnipeg or at Buffalo, 2000 miles further south. It is unnecessary to repeat that in normal winters these Alaskan points are way below zero at this time, producing that high barometric condition that forces storm-bearing areas southward to our latitudes.

As we have had a number of seasons with light rainfall to date, and as our real dry seasons have not been those of light early rainfalls, there is no reason to infer that the present condition is in any wise permanent; on the contrary, as the weather is now changing on the eastern border of northern Alaska, we may look for a change throughout. Barometrical conditions have not changed very much here up till yesterday—for the barometer was still high hereabouts, with the storm pasing eastward over the Canadian line. But the fact that the storm area has dipped far enough south to give us this touch of rain has broken up the high barometer area over the plateau region, the set persistent dry-weather conditions, so that some subsequent storm areas with increasing cold northward may push down our way. Sometimes these changes come on rapidly, sometimes not; we have not sufficient scientific data to forecast as yet these very long-range conditions.

There are six seasons whose rainfall to Dec. 1 was less than an inch, and three more where it did not exceed 1.25 inches to this date. Two of them, '62-'63 and '70-'71, were partial dry years, the rest of them were not. The season of '55-'56 and '90-'91, and of '05-'06 were excellent seasons; '80-'81 was almost a wet season with only .38 inches rainfall to date. Two years ago the light rainfall preceded a dry year, while the drier season of '97-'98, and of '76-'77, had nearly normal rainfalls to date.

We cite these seasons to show that light early rainfalls do not determine the ultimate outcome of the season. L. E. BLOCHMAN.

[Since the foregoing was written Mr. Blochman's forecast has come suddenly true, for the weather map of Monday shows things coming this way with a promise of a great storm which we hope will be realized before this issue reaches the reader.—Editor.]

FIELD CROPS.

Reports of heavy barley movements are coming in from all of the large barley-growing sections of the State, advices from Stockton stating the Sperry mills at that place purchased 20,000 sacks in three days' time last week. A dispatch from Oakdale states that 50,000 sacks of barley were shipped from that place last week, and a Colusa firm recently purchased over 52,000 sacks at Williams. Wheat is also said to be moving freely in many sections. Barley prices on the above lots ranged between $1.05 and $1.15.

Officials of the Southern Pacific railroad are endeavoring to make arrangements with railroads east of Ogden which will allow of shipping baled hay from Nevada to eastern states. There is said to be between 10,000 and 15,000 carloads of surplus alfalfa hay in that state at present which could be readily disposed of in the east providing the transportation charges could be reduced.

IRRIGATION AND DRAINAGE.

The Pleasant Valley Lemon company of Ventura have developed seven wells from 10 to 16 inches in diameter on land four miles distant from land on which they propose to plant 1,000 acres of lemons. The water will be piped to their lemon orchards.

The proposed forming of an irrigation district was discussed at a meeting held at Chico this week at which time several speakers addressed the meeting in regard to the proper steps to pursue and in other ways discussed the advisability of such a step.

Preliminary surveys are being made for the reclaiming of a thousand acres of land owned by Miller & Lux near Gilroy. This land is said to be very fertile, but has been left uncultivated on account of the lack of drainage.

NURSERYMEN'S CONVENTION DATES.

A meeting of several members of the Nurserymen's association was held at San Francisco last week, at which a committee of three, consisting of John Vallance of Oakland, W. V. Eberley of Niles, and E. Gill of Berkeley, was appointed to make arrangements for the holding of the annual conventions of the Pacific Coast and California Nurserymen's associations. The dates for these meetings were tentatively fixed for August 12, 13, and 14. The reason for this early meeting was that the American Florist and Horticultural association will be in session here from August 17th to 21st, and it is believed that the American Pomological society will hold its convention at Berkeley at or about the same time.

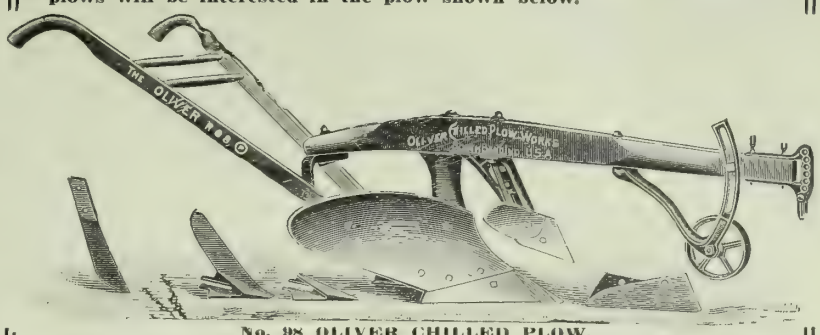
Advices received from Lodi state that shipments of celery the past two weeks have been very heavy and that during the next six weeks shipments will continue to go east. There has been an average of from four to six cars going out daily.

KUTNER-GOLSTEIN CO., Fresno, Selma and Hanford Agents

ECONOMY

NEWELL MATHEWS CO. Los Angeles
EMIGH WINCHELL HDWE. CO Sacramento.

Any farmer wishing to economize in cost of plowing with single plows will be interested in the plow shown below.



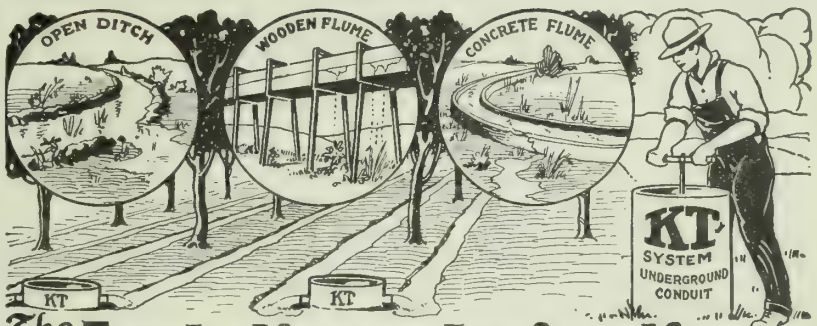
No. 98 OLIVER CHILLED PLOW.

A Marvel of Inventive Genius.

The illustration reveals our reversible slip point and share. The complete share, being composed of two parts, can be reversed and the cutting edge becomes self-sharpening when turned over. Longer wear is the result. No grinding, no chipping, no trouble to reverse. Slip held to place by a locking lever which dispenses with bolt or key.

WE WOULD BE MOBBED
If we should stop making this plow

OLIVER CHILLED PLOW WORKS, San Francisco, Cal.



The Evolution of Irrigation

It is only a comparatively few years since practically all irrigating was done by means of open ditches. These gradually gave way to the use of wooden and concrete flumes. Today, however, all these methods have been almost universally superseded by the

"K T" SYSTEM

of underground conduits—which saves Water, Money, Land and Labor. Write today for the "K T" Brown Book on Irrigation, or for any specific information you may require.

KELLAR-THOMASON CO.
1234 EAST 28TH STREET, LOS ANGELES
SALES OFFICE AND SHOW ROOM, 105 North Los Angeles St.
(Ask your Dealer or Contractor)

TREES
Grown on Sandy Loam Soil

No Spike Roots.
Almonds on Almond & Peach root.
All Varieties of Fruit Trees for sale.
Write for Special Prices.

Land for sale in large and small tracts on small terms. We plant and care for orchards and guarantee a stand of 95%.

Plenty of water.

RIPON NURSERY and IMPROVEMENT CO.
J. F. STUART, MGR.

FRUIT TREES
"HEMET GROWN ARE BEST"

Apricots, Peaches, Pears, Apples, Olives, Walnuts, Plums, etc., etc.

Send a list of your wants and I will quote you special prices.

Julius Mayr
"TREE GROWER"
HEMET CALIFORNIA

Walnuts for PROFIT

HAVE YOU WALNUT SOIL?
Why not grow them? No better market present or future for any California product. 70% of walnuts consumed in the U. S. are imported.

OUR FRANQUETTE
and
SAN JOSE MAYETTE TREES
Grafted on native California Black root are late blooming, not frosted and practically immune to blight. See article in Pacific Rural Press of November 7th on our walnut orchard at Morgan Hill. Be sure to see samples of our nuts and investigate our trees before ordering elsewhere.

Ruehl-Wheeler Nursery
163 South Market St.,
San Jose, Cal.
Trees for sale and samples of nuts also at
HALLAWELL SEED CO.,
258 Market St., San Francisco
CALIFORNIA SEED CO.,
151 Market St., San Francisco
SUNSET NURSERY CO.,
92 41st St., Oakland
VALLANCE BROS.,
81 Glen Ave., Oakland

Swine Growing on a Fruit Ranch.

[Written for PACIFIC RURAL PRESS]

Hogs may be used to solve a multitude of financial troubles, and as a side line are being highly recommended by dairymen in all parts of the State, but that they are also an asset to the horticulturalist with a newly planted orchard has been thoroughly demonstrated by Imrie brothers of Napa county.

The land they farm comprises about 100 acres of bearing orchard, 100 acres of young orchard which has not yet come into bearing, and about 200 acres of hay and grain.

All of this land contributes feed to the hog herd, the older orchard supplying a large amount of cull apples, pears, and miscellaneous fruits, the grain and hay land stubble in the fall and the young orchards, pumpkins and Indian corn in liberal amounts. It is this last named land that helps most in furnishing feed for the 160 to 200 hogs that are turned off annually. At times this land yields as much as 20 tons of pumpkins to the acre and usually a ton of corn to the acre.

Besides the above feeds, cull fruit from the packing houses is purchased in the fall and during the spring months skim milk and butter milk are bought for the young pigs.

In harvesting the corn, the small ears are left on the stalks, and are later harvested by the hogs themselves, who run at large in the corn as well as in the older orchards, thus cleaning up everything available in the way of feed. Experience has usually shown that hogs are apt to damage fruit trees when run in orchards promiscuously, unless provided with plenty of feed. In this case a large part of the feeding is done at the hog lots.

The pumpkins are not raised amongst the corn, as they need all of the sun possible. After ripening they are hauled to the feeding pens, and fed to the pigs and older hogs on the ground, first being broken open. It sometimes happens that more feed is required than can be grown in the above manner, in which case a small field of barley is left unharvested, the hogs pasturing it off.

Feed alone, while a most important part, is not the only requirement for success with hogs, according to Messrs. Imrie, neither are large numbers the chief factor, but rather, the quality of the stock grown, and in this respect they have endeavored to build on a little better foundation each year through the use of purebred boars. Berkshires have been selected for this purpose and when bred to grade Poland China sows the progeny have made unusualy good stock hogs.

From 15 to 17 of these sows are kept for breeding purposes, the practice being to have then farrow twice a year, the spring litters in March and the fall litters in September. The first named usually make the best hogs on account of the buttermilk that they receive, it being impossible to purchase that feed in the fall months. The nearest to this buttermilk that the fall pigs get are pumpkins, which are fairly good for young growing pigs, when fed liberally.

During the major portion of the year the hogs run at large, in the orchards or stubble fields, these being fenced off into moderate sized plots, as it has been found better to run them in small bands. At farrowing time and in wet weather, it is necessary to provide shelter, a shed having in the past provided protection for the stock hogs in bad weather and a farrowing house accomplishing the same purpose for the brood sows with their young pigs.

Experience here has shown that to raise hogs to the best advantage it is necessary to have convenient and warm buildings; and with that end in view the farrowing house was so erected that it holds 16 sows with their litters all at one time, besides providing a mixing room for feeds. The floor in this building was made of concrete, insuring sanitation, another very important point in the success of this establishment, for while cholera has been prevalent on adjoining farms, the Imries have never in many years' experience been bothered with it. This has been due they think to the fact that they keep their stock free from lice with crude oil poured on the wallows and over the bedding in pens, keep their pens and quarters clean at all times, and clean out the water troughs once a week and pour in fresh water direct from the water tank every day. Besides keeping their pens free from mud, slacked lime is sprinkled generously over the floors and around the pens and charcoal is furnished in liberal amounts to be eaten at will by the hogs.

In the past the hogs have been turned off the ranch at about a year old weighing 200 to 220 pounds, but it is thought that these weights will be secured in a shorter time in the future on account of the new fattening pens which are to be built this fall. These pens will be covered with a roof, protecting the animals from bad weather and at the same time materially reduce the labor required in feeding and caring for them.

To quote Mr. Imrie: "The hog business is not all velvet, and they take a good deal of our time in caring for them, but the $2500 that we have received this year from the hogs has helped a lot and we hope to do even better than that when we get things fixed up better to care for them."

It is true that not all orchardists are as well prepared to handle swine as the Imrie brothers, at least not in such a large way, but every fruit grower could raise a moderate amount in a similar manner and greatly increase his yearly revenues. It is needless to say that where hogs pay so well under the above conditions, equally good if not better results are entirely possible on dairy and alfalfa farms, where conditions are much better.

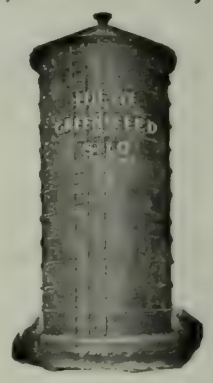
Cholera is often carried in irrigating ditches. See that your own hogs do not get into the ditches and you will at least be safe from that source.

Keep clean drinking water before the hog and you will not find him drinking out of the wallow where disease is apt to breed.

Place Your Order Now for an

IDEAL GREEN FEED SILO

for delivery early in the spring so you can get it up in time to put into it THAT FIRST CUTTING OF ALFALFA, that as hay is hardly worth while harvesting, but which makes good ensilage.



As a Summer Feed, it is superior to a soiling crop and is a good insurance against dried-up pastures.

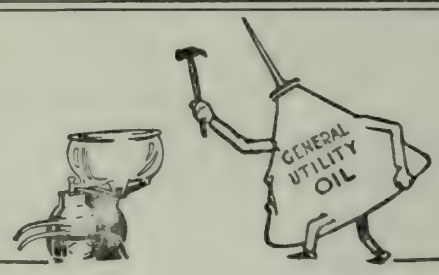
Write now for Circular B and our special proposition.

De Laval Dairy Supply Company

SAN FRANCISCO SEATTLE

Alpha Engines Feed Cutters

Everything for the Dairy



The Wrong Oil Ruins Your Separator

To lubricate your separator with ordinary or general utility oil is one of the quickest ways of sending it to the junk pile. You need a special oil for the finely adjusted mechanism of this delicate farm machine.

Standard Hand Separator Oil

is made especially for cream separators—and for that reason it will most satisfactorily lubricate your separator. It keeps the bowl spinning smoothly and enables you to get *all* the cream. It doesn't "gum." Saves repair expense. Lengthens the life of your separator. Ask your dealer for Standard Hand Separator Oil.

Standard Oil Company

(California)

60 HEAD-- POLAND CHINA PIGS FOR SALE --60 HEAD

Both Large and Medium Type

Ready for Delivery January 15. Ten weeks to three months old. Prices reasonable and will guarantee to please or refund your money.

W. A. YOUNG, LODI, CALIF.

Oregon Dairy Practices.

[Written for PACIFIC RURAL PRESS]

Alfalfa has so simplified dairying practices in most sections of California that the raising of widely diversified feeds is only of importance in a few of the northern counties of the State, where climatic conditions are very similar to those found in Oregon.

Because of this more is perhaps said and written of alfalfa growing and feeding practices than of other such crops as beets, carrots, kale, and vetches, all of which command the attention of northern dairymen in a large way and some of which might be profitably grown in our larger alfalfa sections as a supplementary feed with alfalfa.

In this respect the methods used by C. P. Hembree, of Monmouth, Oregon, in growing feed is of interest, as it shows what may be accomplished under conditions that the average California dairyman would consider very hard to overcome.

Among the feeds grown on this ranch are a thousand headed kale, vetch and oat hay, clover, blue grass and meadow grass pasture, corn for silage, beets, rutabagas and carrots.

The kale is considered the most valuable of all of the above feeds, as it grows a heavy tonnage to the acre and furnishes a succulent feed during the winter months. Some condensary plants in Humboldt county have, however, seriously objected to dairymen feeding kale, contending that it gives the milk an objectionable flavor. Kale is usually transplanted from the seed beds to the field during July, being set from 16 to 18 inches apart in rows three feet apart, thus allowing for good clean cultivation, the same as is needed for cabbage or cauliflower. The usual yield of kale is from 25 to 35 tons to the acre, the crop being harvested on this ranch with an ax, the practice being to cut a wagon load at the time as it is required. Each head of this kale averages about 25 pounds, 40 such heads being sufficient for 20 head of Jerseys.

Mr. Hembree starts to feed kale in the latter part of September and feeds as late as the middle of April in some years.

As rains in that section come earlier than in most places in California, oat and vetch are planted early in the fall and sometimes as early as June, which supplies green feed as well as hay.

Meadow grasses, clover and blue grass pastures provide considerable feed during the summer months.

Corn silage is becoming of greater importance there, as it is in California, the common practice being to plant corn for silage purposes about the first of May, and silo the corn about the first of September. Beets, carrots, and rutabagas are grown during the summer months and harvested in the fall in much the same manner as is practised by dairymen in the coast regions of California. After harvesting, these crops are stored until winter, at which time they are washed, cut up and fed to the cattle in feed troughs. When kale is available, Mr. Hembree feeds about 15 pounds of kale and 10 pounds of the chopped carrots to each animal, which is, he says, a very satisfactory ration for milk cows.

Other feeds used in rations are concentrated feeds, such as are used by dairymen in this State, but as we have before pointed out dairymen in California do not appreciate how easy it is to raise feed in our alfalfa sections as compared with the difficulties encountered in many other sections.

The time-worn expression that "California is the natural home for dairy cows" is brought home to us forcibly when we compare our advantages to those of other States.

KAFFIR CORN AS A FEED.

To the Editor: Would like to know more about the use of Kaffir or Egyptian corn for stock and also for silage.—L. B. H., Los Altos.

[In most sections of this State Kaffir corn gives materially better returns in both grain and forage than Indian corn, and while it ranks below Indian corn in palatability it is so much better suited to our climatic condition that it should be more widely grown.

It may be fed to work horses in either threshed grain or in the head, and dairy cows, young stock, idle horses, and colts thrive on kaffir forage carrying the heads. When the grain is fed it should be soaked before using. When supplemented with skimmilk kaffir meal may be fed to calves, and the grain, when moistened with water to stifle the dust, may be fed to mature swine. It is well suited to feeding with alfalfa or other laxative feeds.

As a silage Indian corn has usually been found to be a better feed for dairy cows than kaffir silage, but in sections where Indian corn does not yield well it is highly profitable to silo the kaffir corn and feed in connection with alfalfa hay.—Editor.]

HOME PROTECTION AGAINST FIRE.

Written for the Pacific Rural Press.

Protection from fires is a thing that all municipalities provide for, yet there are very few farmers who have ample means of fighting fire, although their barns and buildings are perhaps more subject to fires than most other classes of buildings on account of the inflammable nature of most things stored therein.

On the ranch of T. S. Glide, near Davis, protection against fire loss is provided by having fire extinguishers, set on bracketed shelves, on each side of every barn, shed and other building on his ranch. When occasion demands these may be instantly jerked from the shelf, turned upside down and the gases, formed when water and chemicals mix, quickly extinguishes any ordinary blaze. They have also been successfully used in fighting grass fires, as they check the blaze with wet sacks which could not be approached without the extinguisher.

Early each summer Mr. Glide makes a personal inspection of each extinguisher, refilling it and making sure that all are ready for any emergency that may come up during the summer months when fires are most likely to occur.

Acorn hogs are oily and do not find a ready market unless finished on grain.

MORE MILK AT LESS COST

500 LBS. MORE MILK per day by feeding LARROWE'S DRIED BEET PULP

READ THIS LETTER from Hutton Bros., proprietors Dixon Certified Milk Farm, Dixon, California:

"It might be of interest to you to know the results of feeding Larrowe's Dried Beet Pulp at our dairy. We are milking 167 cows and are feeding 1200 pounds of pulp per day about 7 pounds to the animal. The pulp is fed in addition to a grain ration of 5 pounds per animal, together with all the alfalfa hay they will eat. As stated above, the grain and hay is our regular ration, and the beet pulp increased our milk yield almost 500 pounds per day. The increase was during the stormiest and most uncomfortable weather of last winter. When we were getting these results from this method of feeding, our supply of beet pulp was suddenly exhausted and for several days we were unable to get any more because of the washouts on the railroad. Our milk output almost immediately fell off the amount of increase mentioned, thus furnishing absolute proof that the pulp is to be given credit for our unusual milk yield, which has again attained the maximum since we obtained a fresh supply upon the arrival of the delayed carload. We unhesitatingly recommend beet pulp to any and all dairymen who feed for results."

Be sure you get LARROWE'S Dried Beet Pulp. It is uniform in color; never blackened or burned.

Larrowe's Dried Beet Pulp is clean, healthful, succulent, and will not only increase your milk yield, but also keep your stock in better health and condition.

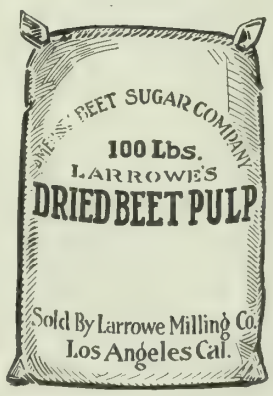
It is simply the pure shredded root of the sugar beet with only the sugar and water extracted. Always uniform. Keeps indefinitely. 1 ton contains as much nutriment as 5 tons of silage. It is light, bulky; aids digestion and is a wonderful feed for dairy cows, hogs, horses and poultry.

Get 1 Sack From Your Dealer Today and prove its worth by feeding to one cow whose milk record you know. You'll get instant results.

"PROFITABLE FEEDING" —our illustrated booklet giving feeding instructions and other information—will be mailed free on request.

THE LARROWE MILLING CO.
607 Central Bldg.,
LOS ANGELES, CALIF.

Some feeders prefer Larrowe's MOLASSES-Dried Beet Pulp for its sweetness. Just the plain pulp with beet molasses dried. Fine for fattening, also for horses.



Hopland Stock Farm

HOPLAND, CAL.

REGISTERED SHORTHORN CATTLE
REGISTERED BERKSHIRE HOGS
10 REGISTERED SHROPSHIRE SHEEP

LARGEST AND BEST-EQUIPPED POULTRY DEPARTMENT IN THE UNITED STATES.

Including Modern Hatchery now in process of enlargement.

2-YR. OLD SHIRE STALLION FOR SALE

SEVERN DONALD 13957 by Severn Pilot 11587
DAM RIO VISTA BELLE 13100 by Stuntney Fen Duke 6399

This young horse weighs 1700 lbs. Stands over 16 hands. He will make a horse weighing a ton or more. His sire weighs 2100 and his dam 1900. This colt and his sire won the California Stallion Registration Board's Special Prize at 1914 State Fair.

For further particulars write

J. McCORMACK, Rio Vista, California

With the Live Stock Men

The Hawaiian government has recently purchased a number of registered Berkshires from Chas. Goodman of Williams.

The herd of grade Holsteins owned by Steve Vivian near Modesto has been sold for $3,000. There were 22 animals in the herd.

The owner of the Paicines ranch in San Benito county have purchased 3500 acres of land from Brown brothers, with which to enlarge their stock ranch at that place.

Work on the new creamery at Marysville is progressing, and Manager M. Gomes expects to be able to start the plant by the first of the year.

The average price paid for dairy cows at the J. A. Bettencourt sale held last week in Kings county was $133.51. The herd consisted principally of Holsteins and Durhams.

At a meeting held in Merced county last week, a swine breeders' association was perfected in order to better cope with the cholera situation and in other ways advance the swine industry of that county.

A San Francisco horse buyer recently shipped 50 head of horses from Modesto to the city markets. The horses were purchased from farmers in that section at prices ranging from $100 to $200 a head.

A report from Bishop, Inyo county, states that P. W. Smith has just returned from the east with 12 head of registered Hereford bulls which he purchased in Kansas. They will be used on the E. H. Edwards cattle.

The annual convention of the California State Veterinary Medical association will be held in San Francisco December 9 to 14. Such subjects as hog cholera, the foot-and-mouth disease, and the milk situation will be discussed.

C. W. Bowers of the firm of Ruby & Bowers reports that he has sold 30 head of registered stallions in New Mexico this fall. Mr. Bowers expects to start a public sales yard at Davis where farmers will be able to dispose of their surplus horses at a very low cost.

Two stock inspectors have been appointed by Governor Odie of Nevada to inspect all shipments of livestock entering that State. Any shipments made of suspicious-looking cattle will be turned back in an attempt to overcome all danger of the spreading of the foot-and-mouth disease among Nevada livestock.

There are now six stave silos erected and part of them filled with corn at the Panama-Pacific Exposition grounds. Some difficulty was encountered with the first one filled owing to the softness of the ground, but this was overcome by the use of piling. The livestock buildings are now nearing completion and show much forethought in their arrangement.

The cattle market at the Portland Union Stock Yards continued steady in all lines last week with light receipts. Some very good steers went at $7.45 and good quality cows at $6.00. Hog receipts for the week were large, 8,000 coming forward, the market closing steady to strong at $7.30. The sheep market was strong, but there were barley enough good killing sheep coming forward to supply the demands of killer.

The Dunham-McLaughlin company have received at their barns at Oakland a shipment of 16 Percheron stallions from the East. With the exception of one four-year-old and one three-year-old, the horses are all two-year-olds and are an extra classy bunch. It had been the intention of this company to exhibit six of these animals at the International Livestock Show at Chicago, before bringing them West, but this was impossible on account of the foot-and-mouth outbreak.

The Porterville Alfalfa company has just shipped two hundred head of alfalfa and grain-finished steers to the San Francisco market for which they received approximately $20,000. Officers of the company state that there is no longer doubt in their minds that steers can be profitably handled on alfalfa ranches.

Plans are ready for the starting of the Exeter creamery this week at Exeter, Tulare county. A fine building has been erected at a cost of $12,000 and the cream from 500 cows has been promised by dairymen in that section.

In writing this office N. E. Mullick of Willows has the following to say regarding the Holsteins offered in the Geo. Smith sale next week: "The cows that Mr. Smith purchased of me were high-class animals, as is shown by their extended pedigrees and the fact that all passed the tuberculin test. I had never had a case of tuberculosis and I had not brought a female into the herd for six years. For one who wishes to establish a foundation herd they are well worth considering, as the cows are good producers and are all good individuals. There are several choice heifers of King Segis and De Kol breeding that will be money makers at any price and I am interested in seeing them well distributed over the State."

A Royal Commission, appointed by the Commonwealth Government of Australia, has been investigating the alleged connection between certain people there in the meat business with the so-called "American Beef Trust." While the latter concern has been buying meat from several people there it has not been proved that the trust has any direct hold on cattle stations, etc. One of the most interesting witnesses heard by the commission was Sidney Kidman, known in Australia as the "cattle king." He stated that he leased in New Zealand, South Australia and New South Wales, a total of 30,782,400 acres at an annual rental of $70,000. He also had interests in other states. He owned from 150,000 to 190,000 sheep and had a share in 70,000 more. And he owned 250,000 head of cattle and a share in 20,000 others. This will give some idea of land values in those countries as compared with California.

Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

HORSES AND MULES

FOR SALE—Registered Percheron Mares. No. 94918-94919. One ton each. A. Eddlemon, Acampo, Cal.

MULES—30 of them. Will sacrifice cheap for quick sale. All fine condition. Average age 7 years. Box 10, Pacific Rural Press.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old; also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE—Imported Shire stallion, six years old. Weight 2100 lbs. In perfect condition. Price, $2000. Jack Dooling, Hollister, Cal.

DAIRY CATTLE

O. I. C. SWINE—The White Breed. Entire herd immunized against hog cholera. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars in use. All stock sent out will be immunized, registered and crated at purchase price. Send your orders now. C. B. Cunningham, B. J. Mills, Sacramento County, California.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

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HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

JOHN LYNCH, breeder of Registered Shorthorns. Milk strain choice. Young stock for sale. Box 321, Petaluma, Cal.

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WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

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N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

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PACKWOOD FARM HERD of Holsteins. W. F. Mitchell, Visalia, Cal.

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70 HEAD DUROCS REGISTERED—Must be sold immediately. Breed sows and gilts, fall pigs, both sexes, and a number of yearling service boars. We are closing out everything. If you want a bargain, drop us a line. All mature stock. Chlorea immune. Lindquist Bros., Turlock, Cal.

STEY-BRAE BERKSHIRE HOGS, headed by Bandmaster 2nd, junior champion Iowa State Fair. My females were winners at Iowa, Wisconsin and Minnesota State Fairs. Address E. B. MacFarland, 410 Call Building, San Francisco.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

PURE-BRED Duroc-Jersey Swine. Prize winners. Limited number only. $10 each F. O. B. Western Hog and Land Syndicate, 919 Hearst Bldg., San Francisco.

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BERKSHIRES—Boar pigs ready for delivery, from Crusader's Duchess 11th 197319 by Baron Duke 194th 191105. F. M. Stern, St. Helena, Cal.

BERKSHIRES—Bred for size and bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Lawe, Inyo County, Cal.

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BERKSHIRES—Utility and choice Registered Pedigree stock. Correspondence solicited. C. H. Thompson, Modesto, Cal.

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HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

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MISCELLANEOUS

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

Oak Grove BERKSHIRES

Cholera Immune

Our herd is Cholera Immune, the only Immune Berkshire herd in the State.

Five herd boars in use and they are second to none on the coast. Our sows are of equal merit. We have at present some 300 Berkshires and we know that we can supply what you want.

WRITE US OR CALL

OAK GROVE DAIRY FARM

H. G. ARMSTRONG, Prop.

Woodland, Cal.

Holstein Breeders

I am going to New York the latter part of December and will be present at the Dispersal Sale of the E. H. Dollar herd of 170 of the greatest Holsteins in the world. Will also attend the N. Y. Breeders' Sale Jan. 13-14. I will buy and deliver to any California breeder who wishes to take advantage of carload rates and first-cost price from the East. Correspondence solicited.

E. J. WELDON,

Box 962, Sacramento, Calif.

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BREEDERS AND IMPORTERS OF SHORT-HORN CATTLE

55 New Montgomery Street

San Francisco

1/8 carat $8.00
1/4 carat $17.00
3/8 carat $30.00
1/2 carat $40.00
5/8 carat $52.50
3/4 carat $65.00
7/8 carat $82.50
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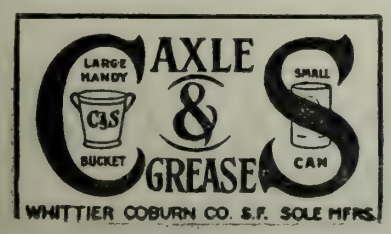

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GOMBAULT'S
CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

GROUND BARLEY FOR HOGS.

To the Editor: We are feeding our pigs whole barley steamed, and the question arises in our minds if greater gains could not be expected if the barley were ground, or ground and steamed. The berries are thoroughly cooked till they are soft.—H. B., Fallon.

[The grinding of barley is a practice that is in use on many of our most successful ranches and one which has been found to be highly profitable. Many farmers have their own grinders and we have often been told that results from feeding ground grain of any kind is far preferable to feeding the whole grain. The J. S. Gibson company near Williams use ground grain exclusively for feeding several hundred head of hogs, and when fed with skim milk have found it to be the most satisfactory ration they can secure. On the Brae Bourne ranch near Santa Rosa a small feed grinder has been used for grinding barley and Mr. Rand states that the saving in grain will justify their use on every ranch. Steaming barley does not seem to increase its worth materially, although it is better to soak grain, whether fed whole or ground.—Editor.]

POTATO VINES FOR FEED.

To the Editor: Please tell me if potato vines will dry up cows or interfere in any way with the flow of milk. My cows have been eating them in the pasture.—Sub., Lake County.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

[Ripe potato vines make a poor feed for milch cows as for other farm animals, while green vines are dangerous on account of a poisonous alkaloid contained therein. The same substance is also found in potato sprouts. If considerable quantities of green potato vines are eaten by the cow, they will cause looseness of the bowels and will have a deleterious influence on the keeping quality and flavor of the milk. A safe way, therefore, is to see to it that the cows do not have access to growing potato vines. In potato districts in Europe, the potato tops are often made into silage, and this makes a much more palatable cow feed than fresh vines and may be fed to cows in amounts of 30 to 40 pounds per head daily without any injurious results.]

SUGAR BEETS FOR MILCH COWS.

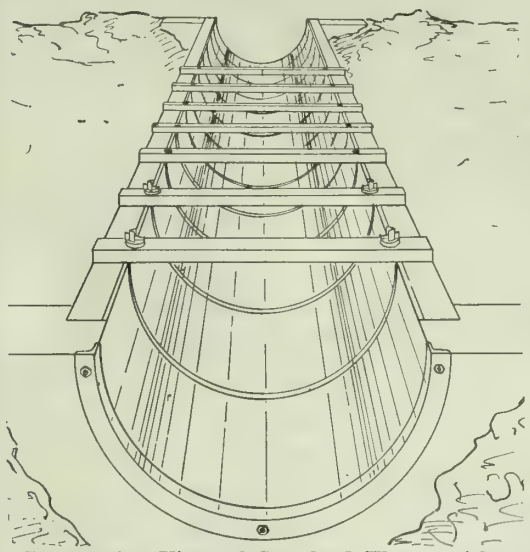
To the Editor: What is your opinion of feeding milch cows sugar beets run through a cutter and mixed with some ground barley and all the alfalfa hay they want?—G. V. B.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

[A ration made up as suggested can hardly be improved upon. Sugar beets are a very satisfactory cow feed, being palatable and highly digestible. The nitrogen-free extract which makes up the bulk of the feed materials in the beets and consists largely of sugar, is 95 to 100 per cent digestible. Sugar beets contain nearly twice as much dry substance as an equal weight of most other root crops and, although the cost of production is higher than for those, the cost and amount of feed materials produced per acre of ground, therefore, as a rule, compares favorably with those of other root crops.]

Strong fences are the best cure for neighboring hogs, which often bring cholera into a healthy herd.

THE IMPROVED Standard Flume



Perspective View of Standard Flume with Cross Bars Partly Removed.

Made with wood or iron cross bars. Improved in design, improved in construction, improved in material. Engineers, private and public, State and Government, pronounce it superior in design and construction to any other flume in the market. Built of commercially pure **Vismera Iron** (guaranteed 99.86 per cent pure) it is a flume built to last —and should be installed wherever permanence and economy are a factor.

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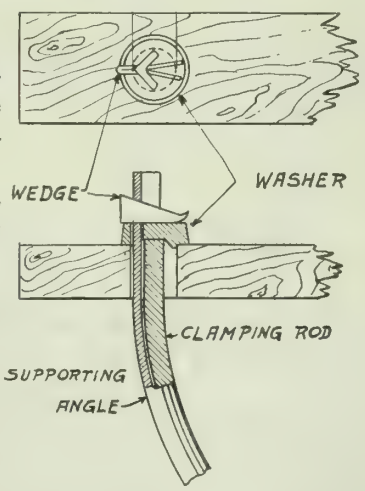
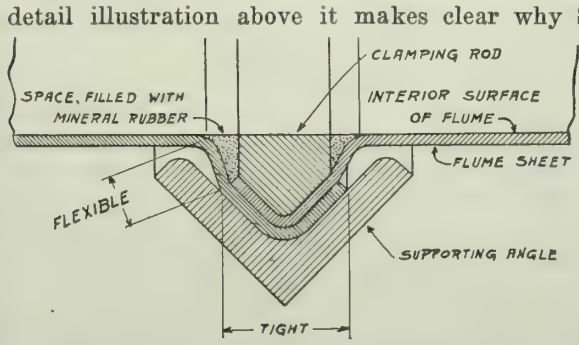
The view on the right shows details of wooden cross bars on the **Improved Standard Flume.** Particularly it illustrates clearly the locking wedge of metal against metal, eliminating all possibility of looseness. It shows the construction of the clamping rod, which is tightened to stay tight when the wedge is driven. The wedge is made as a split key, which is spread after driving. No other flume has the simplicity and absolute rigidness of the **Standard.**



The Standard Expansion Joint

The illustration below shows the cross section construction of the joint on **Improved Standard Flume.** In connection with detail illustration above it makes clear why **Standard Flume** never becomes rickety or second-hand. In any climate, in any job, whether one rod or 10 miles, the joints in **Standard Flume** are adapted to fit the job.



Vismera Iron (99.86 per cent purity guaranteed) from which **Standard Flume** is made is the finest grade of iron obtainable. Wherever used it is established as a standard.

Standard Flume is made in all practical sizes, with wood or iron cross bars, and we offer the flume as the most perfect ever designed.

We will gladly send details, estimates, etc.

Standard Corrugated Pipe Co.

517 RIALTO BLDG., SAN FRANCISCO
739 LAWRENCE ST., LOS ANGELES

Veterinary Queries and Replies

[Answered by Dr. Robt. Boyd, San Francisco Veterinary College.]

BREATHES HARD AND COUGHS.

To the Editor: I have a mare that breathes very hard and coughs. She is in good condition and has a good appetite. Think she has the heaves or has been overheated. E. W. C., Crow's Landing.

We would say this is pulmonary emphysema or heaves. Watch the anus and note if it bobs in and out. This is a very frequent symptom of heaves. Try chopping the hay. Reduce hay and increase grain to compensate. Dampen the hay slightly Give the following: Fowler's solution of Arsenic 5 oz., Glyco-heroin 5 oz. water to make a pint. Give two wine glassfuls in food three times daily. Start with half this quantity twice daily. Gradually work up, then after giving full dose about two weeks, reduce gradually to same dose as you started with. Then stop. The treatment is only palliative; you will have to pay attention always to the feed.]

BLOODY MILK AGAIN.

To the Editor: I have a young cow that gives bloody milk, often clotted like garget. Is a hard milker, but gives lots of it. Seems to be in perfect health. Has been fresh two months.—F S. C., Reedley.

[This may be due to infection of milk by bacilli (B. Prodigeosus). If blood is either through the milk or in clots, the cause may be inflammation, ulcers, or ruptured capillaries. It is impossible to advise without examination.]

ANOTHER HORSE WITH ITCH

To the Editor: I have a mare troubled with itch, as described in the issue of Oct. 31, but our druggist thinks the prescription is too indefinite and might poison the horse. How big a "wineglass" should be used for the dose and did you mean 10 ounces or 10 drams of Fowler's solution of Arsenic?—C. H. S., Chula Vista.

[In pharmacy the wineglassful is always considered as a domestic equivalent of two ounces. A glass of four ounces capacity would be a tumbler. Use 10 ounces of Fowler's solution as per prescription of Oct. 31.]

KNEE SPRING HORSES.

To the Editor.—My horse is slightly knee sprung in one foreleg. Can it be cured, by special methods of shoeing or otherwise?—G. P. C., Lincoln.

To the Editor.—I have a mare seven years old weighing about 1300 pounds with sprung knees. She formerly did heavy freighting. Will the trouble continue to get worse on farm work?—W. M., Chinese Camp.

[A high heeled shoe with rolled toe will relieve this condition. A veterinarian might find the cause by examination, and correct it.]

ABORTION.

To the Editor.—For some reason the cows are losing their calves after carrying them for about five months. They seem to be healthy and the bull too is in fine condition. He was about a year old when the cows were served. They have good, alfalfa hay at night and cow fodder during the day. Thus far three cows have lost their calves. Is it a disease and is it contagious? How can it be cured?—W. J. F., Niles

[This looks like contagious abortion, but it may be due to ergotized food. As the cows are in good condition, I should say it is the former. Call in your nearest graduate veterinarian, as the disease is highly contagious and will go through the whole herd. There are certain control measures, as isolation, irrigation of the interns, and disinfection of the genitalia of animals that have aborted. Methylene blue has also been used with good results, but it would be necessary for you to work under direction of a competent veterinarian.]

CHRONIC FOUNDER.

To the Editor.—Two and a half years ago my 4 year mare, which was in foal, went lame in one forefoot then in the other. A veterinarian said she had "celt founder" and would recover after parturition. She got worse till now both forefeet are contracted and it has worked into the shoulders, which are somewhat contracted. She does not walk lame, only stiff. A few months ago a younger mare went lame as her older sister had, but she has not been bred. Three months in the pasture has not cured it, she still points the foot and holds it up. A veterinarian said It was "navicular" disease and incurable.—W. C. S., Corning.

[The older mare may have been foundered, which is the common term for "Laminitis." There is no such disease as "colt founder." Mares sometimes get laminitis after foaling. The case is now probably one of chronic laminitis. You might try blistering the coronets and having the mare shod with a wide webbed shoe, telling the horse-shoer to keep the heels low and the toe short. The second mare may have "navicular" lameness. In such cases the only thing to do is to have her "nerved," that is, have the operation of neurectomy performed. Then she may go sound for a number of years. I would advise you however, before having this done to see that the veterinarian who preforms the operation is a graduate, as a man who told you the mare had "colt founder" is scarcely likely to be an up-to-date veterinarian.]

MILK FLOW IRREGULAR.

To the Editor: We have a Holstein cow which, until three weeks ago, was giving about forty pounds of milk and gave substantially the same every day. Recently the milk flow has been very irregular and greatly decreased. Sometimes the udder is apparently empty, while perhaps at the next milking she will give a couple of gallons. When we bought the cow in July she was apparently in full milk and had not been fresh long. She has not been bred. She is fed alfalfa hay evening and morning and has access to good alfalfa pasture during the day. Her appetite is good and she seems to be in good healthy condition. Will appreciate advice.—E. H. M., Delevan.

[Give cow a physic of two pounds epsom salts and one ounce powdered ginger, dissolved in one quart of warm water. After bowels return to normal give the following in one pint of ale and one-half pound of molasses, twice daily: Powdered mustard 6 ounces, ammonia carbonate 6 drachms, powdered nux vomica 1½ ounces, powdered ginger 6 ounces, powdered gentian 6 ounces. Mix and divide into six powders and give as above. Keep this up for a couple of weeks and if the cow is not improving write and report her condition.]

ATTENTION!

LAST CALL FOR

Geo. A. Smith's 5th Sale of Registered Stock

CORCORAN, CAL. SATURDAY, DEC. 12, 1914

85 REGISTERED HOLSTEINS

YOUR OPPORTUNITY TO SECURE

COWS—HEIFERS, Fresh and Coming Fresh.
YEARLINGS—HEIFER CALVES and BULLS.

NOT A CULL IN THE LOT

They Please the Eye and Fill the Pail. The calves will be worth more than you pay for the cows.

Great Seed For Foundation Herds.

SEE those splendid Dairy Cows with their Sons, Daughters, Grandsons and Granddaughters.
SEE their grand dairy type—WORKERS BRED FOR BUTTER. Several now with Records.
SEE those excellent Yearlings and Calves that will DOUBLE IN VALUE within a year.
SEE the females that are bred to that excellent SON of the WORLD'S RECORD DAUGHTER of the great King Segis.
SEE SEGIS OAK HOMESTEAD FOBES, a proven Wisconsin sire that was purchased at a long price for this sale. His dam made 781 lbs. BUTTER from 17541 lbs. MILK in 1 year. His 7 nearest dams have average 7 day Butter Records of 27.6 lbs. His 7 nearest sires have 304 tested daughters. Segis Oak Homestead Fobes and 16 of his Sons and Daughters are SPECIAL ATTRACTIONS in This Sale.
SEE JUDGE HENGERVELD PAUL WAYNE and JUDGE HENGERVELD JOHANNA, promising young Eastern Bred sires, whose half-sister has just broken the World's Record, making 1129 lbs. BUTTER from 22897 lbs. MILK in 1 year. WORLD'S CHAMPION SENIOR 3 YR. OLD. Many Breeders owe their Fame and Fortune to ONE GOOD SIRE—What is this kind worth to you?
BUYERS HAVE NO REGRETS—Holsteins that I SOLD in my June Sale are making BIG MONEY for the PURCHASERS. Nine have been resold at 100 per cent PROFIT. If you are in the Dairy and Breeding Business for Profit, START at the TOP with some of this GOOD BLOOD. I offer these animals on their MERITS—I believe they will be appreciated.

YOU are Cordially Invited and Urged to inspect the stock before the Sale.

REMEMBER the date—SATURDAY, DEC. 12, 1914

COL. BEN A. RHOADES, Auctioneer.

Geo. A. Smith, Corcoran, Cal.

Hillcrest Stock Farm

Breeder of Shorthorn Cattle, French Merino and Shropshire Sheep.
DAVIS, CAL. T. S. GLIDE, Prop.

At 1914 State Fair our Shorthorns took first prize in every class we entered except two, and in these were beaten only by stock of our blood. We took all the herd prizes, first and second prizes in produce of cow and first in get of sire.

KING LANCASTER, 3 times Grand Champion

Below is a list of our Grand Champion bulls for the last eleven years—a list that will stand for quite awhile:

1904—Hillcrest Hero
1905-1906—King Edward (Also Grand Champion World's Fair at Portland.)
1908—King of Greenwood
1909, 1910, 1911—King Lancaster
1912—Greenwood Knight
1913—Greenwood Knight
1914—Greenwood King

All except the first two of the list were bred by us. We have beaten a number of bulls that were bought in the East at prices ranging from $500 to $3000 and brought out here to beat us.

Range raised young bulls for sale, single or carload lots.

Don Adonis of Linda Vista.

BERKSHIRES — GUERNSEYS

Our BERKSHIRES are the finest in the State. At the last State Fair we entered in fourteen classes and won ten firsts.

Stock of all ages for sale.

GUERNSEYS—We offer for sale bull calves of A. R. breeding on both sides. Some by Don Adonis of Linda Vista, whose dam, two grand dams, and two great grand dams have an average record of 714 pounds butter-fat in one year.

GRAPEWILD FARM,
A. B. Humphrey, Owner
Mayhews, Cal.

POLAND-CHINA HOGS

THE BROWNING STOCK FARM
LARGE TYPE
YOUNG STOCK FOR SALE. BOTH SEXES.
W. H. Browning, Prop. Woodland, Cal.

RHOADES & RHOADES
EXPERT LIVE
STOCK AUCTIONEERS
Sales conducted in all parts of California and adjoining States. Write for dates and terms.
Twenty-five years' experience.
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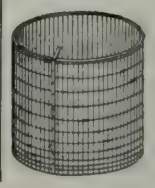

REDWOOD
TANKS—SILOS
Water troughs, tank frames, and towers. Steel and Wood Windmills.
Prices the lowest.
BROWN & DYSON
640 So. Center St.
Stockton, Cal.

The Foot and Mouth Disease.

While there have been no outbreaks of the foot and mouth disease in this State as yet, and present indications do not lead that way, we have communications from several subscribers asking for information relative to the disease and its symptoms.

H. O. Sampson, formerly with U. S. Dept, Agr., says that "foot and mouth disease, or aphthous fever, is a highly contagious, febrile disease, affecting chiefly cloven-footed animals. It is accompanied by vesicles, or blisters, in the mouth and around the feet. The malady most frequently attacks cattle, sheep, goats, and swine, but occasionally it attacks dogs, cats, and man; also the large herbivorous animals that are kept in zoological gardens sometimes contract the disease. One attack does not confer immunity, for the same animal may be affected repeatedly. In most other infectious diseases, one attack is rarely followed by another in the same animal.

"Nearly every country has suffered from periodical invasions of foot-and mouth disease, and some European countries suffer almost constantly from its ravages. The mortality is not great, as only about one per cent. of the animals affected die, but the disease spreads very rapidly. From 25 to 75 per cent. of the herds in a district are affected, and 25 to 50 per cent. of the animals in a herd. There was an invasion in 1870, in Massachusetts and New York, another in New England in 1902, and another in Michigan, Pennsylvania and New York in 1908. In each case the disease was combated energetically and stamped out, and the loss was trifling. The present outbreak is more widespread, but with vigorous preventive measures and the killing of all affected animals it should be brought under control.

"The cause of foot-and-mouth disease is a specific virus. The causal agent of the virus has never been isolated. The virus exists in the liquid of the vesicles, saliva, milk, excrement, urine, and in expired air. It persists in manure piles and feeding troughs for four or five months, and resists freezing. It may be retained for several months on the body of an animal that has recovered, and, during such time, the animal may contaminate others. The virus may be conveyed by infected animals, stable utensils, manure, hay and grain, clothing of persons going from farm to farm, dogs, cats, poultry, and pigeons. Thus it is readily seen why the authorities stop the transportation of animals, hay, straw, etc., from areas where the disease is found. The virus enters the body through the digestive tract, in inspired air, and by means of wounds of the skin. Human beings may contract the disease from milk or infected animals and from handling these animals. The infection causes but slight annoyance in humans, and soon diseappears when the use of the milk is stopped and cleanliness observed in handling the diseased animals."

Dr. H. C. Reynolds describes the disease as follows:

"The first symptoms are a moderate fever, ranging from 103 degrees to 105 degrees F.; a dry hot, muzzle and mouth; an apparent tenderness in chewing; and grinding of the teeth. The animal resists efforts to examine the mouth and uses its tongue to grasp feed only with difficulty. Chewing seems painful, feed is dropped, and stringy saliva dribbles from the mouth. The tongue is worked around in the mouth with a smacking or clicking sound. The animal may show signs of soreness of the feet.

"In two or three days, vesicles, or water blisters, appear in the mouth and often on the feet, teats, and udder, and the temperature of the animal falls. These vesicles are painful, and the teats and udder may be swollen. The vesicles appear as small elevations of the top layers of the mucous membrane or skin. They are from 1-8 to 1-2 inch in diameter and of a grayish color. They may grow larger and become filled with a clear, yellowish fluid. Several may unite to form a large, blister-like swelling. The thin epidemic covering ruptures and the cloudy serum leaks out; the thin skin easily peels off, leaving a bright red surface, slightly depressed, and surrounded by a clean, slightly undermined border of mucous membrane, or skin. The surface then becomes covered with a sticky, dirty-yellow exudate. When the yellowish exudate is scraped off, the surface looks red.

"From this time on healing is prompt and the border of the erosion gradually closes in. When the feet are very sore, the animal is stiff and lame and lies down much of the time. The animal may refuse to eat or drink for some days and may emaciate rapidly. Cows may give little or no milk and the udder may become inflamed and ruined. The entire course of the disease covers about three weeks. Many of the animals are left in a poor, debilitated condition."

Every precaution should be taken to prevent the spread of this disease. The best plan is to destroy all animals that have been exposed as well as all affected ones. Extreme care, too, should be taken to disinfect all infected quarters. If possible old buildings should be abandoned or destroyed. Where this is not practicable, the woodwork should be cleansed with a strong disinfectant solution, the floors cleaned, the stable utensils destroyed and the manure burned. Dead carcasses should be burned, if possible; in case they cannot be burned they should be placed in deep pits, covered with quick lime, and buried. Obviously these burial places should not be accessible to animals, nor be near streams from which water drains to pastures. The carcass should not be dragged along the ground, but should be hauled to the burying place, and the vehicle used should later be disinfected. All clothing of attendants should be burned. Strangers must not be allowed on infected farms, and no one should be permitted to leave the farm unless clothing and shoes are first disinfected.

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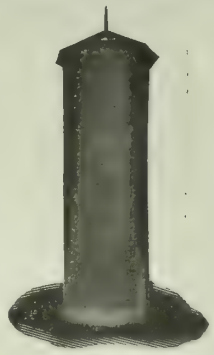

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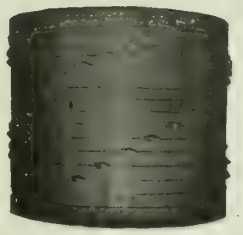

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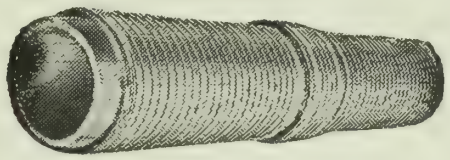

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has just been established by Tilly Alcartra, a 5-year-old Holstein cow, who finished a yearly official test with a record of 30,452 pounds of milk, exceeding the best previous record nearly 500 pounds.

BREED FOR MILK PRODUCTION

We have for our herd sire Prince Alcartra Korndyke, the only son of Tilly Alcartra, now being used on a registered Holstein herd, and can furnish you fine young bulls sired by him and out of registered and high-testing dams.

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SHIRE HORSES

I have some good stallions for sale and a few young mares.

Prices as Usual in spite of the War

You had better buy now, as importations have stopped.

For further particulars, address

HENRY WHEATLEY,

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MODESTO KING

1st prize aged boar at 1913 State Fair

Put your low-priced barley into good hogs this fall

Have 85 suckling pigs to pick from now. Ten more sows to farrow soon. Will have 20 bred gilts, also service boars for sale after showing at State Fair in September. Hogs are scarce. Order now for fall delivery.

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JNO. P. DAGGS, Prop., Modesto.

Poultry and the Meat Supply.

[Written for PACIFIC RURAL PRESS]

Chief among the causes that are making the problem of meat supply one of the most important are the breaking up of the public domain by the homesteader, the fluctuation in the cost of feeding the cattle and sheep, and the continually increasing price of cultivated land.

Here in California the last named factor is perhaps the dominant one in retarding our meat-growing industry, and at the same time the chief one increasing the demand, through an increased population, as with few exceptions land values are prohibitive for a generous meat supply, unless we can increase production on the more intensive plan.

Poultry for Meat.—The raising of poultry is one factor that is very often overlooked when we think of this meat shortage, and yet it is one phase which fits in ideally with the intensive farm system that is everywhere being felt, and one that we must depend upon more and more as the State is developed.

With poultry, as with all other lines of farm animals, success can be attained only when we give the proper care and attention demanded. In most of our large poultry centers the need of more systematically caring for poultry has forced poultry men to better and more up-to-date methods of housing, feeding, and caring for their birds, and the results have often been startling to the farmer who has raised chickens with varied success in a manner that he has been pleased to call "Nature's Way."

Considering that a large part of our poultry are grown on farms whose interests are more diversified than in the specialized poultry districts, it would seem that before we can hope to realize the most from the opportunity afforded by the meat shortage, farmers generally must follow closer in the path of the specializing poultryman, in so far as better breeding and care are concerned.

With poultry there are two branches to be considered, viz., the egg and the fowl. The former has received most attention by our specialists to the extent that we have improved egg grades and marketing conditions through co-operation and have gradually educated the consumers to a higher viewpoint of such foodstuffs.

Meat Types for the Farm.—There has been no one most popular type used on farms where poultry raising is conducted as a side issue, although the heavier breeds with their meat-making possibilities have probably led. This is the result of a desire on the part of the average farmer to turn off meat as well as eggs, and it is from this source that we may always expect our greatest supply of table fowls. A more general realization of the advantages obtained from such breeds on the average farm, together with better breeding, better feeding, and better housing will greatly aid in solving the problem.

While there is still much to be accomplished along this line, there is work of equal importance to be done at this time toward the proper feeding and fitting of fowls intended for market.

This factor affects everyone interested in the poultry industry, as the quality of meat demanded by the consuming public has changed materially within the last 10 years and is continually in favor of the better finished fowl as well as the better finished beef, sheep, or hog.

Other growers of livestock have been quick to see the tendency of this movement and have inaugurated a system of fattening and finishing to comply with the demand, thereby adding greatly to their profits.

With poultry however, interest in such systems has been lax, and even our largest commercial poultrymen find it difficult to dispose of both young and old stock at anything like the price they would seem to warrant, chiefly because such birds have not been properly finished for the meat trade.

A large commercial grower in Alameda county is authority for the statement that in his district are 100,000 birds; and that, so far as he knows, no one is attepting to improve the quality of their birds from a meat standpoint. He himself, however, realizes the importance of this factor and expects to take advantage of it to a large extent by caponizing his broilers and thus realize a profit from that end of the business, instead of turning off his birds at the actual cost of production, simply because of their poor market condition.

Finishing Broilers.—In Sonoma county, where the egg type fowl has reigned supreme, crate-fattened broilers have been turned off by at least one successful poultryman, in a way that shows the possibilities of the better finished fowl for market.

In brief his system is to select the young roosters from the flock when about 10 weeks of age, putting 12 of them into crates two and a half feet square and one foot high. These crates have wire netting bottoms, which allow the droppings to fall into a drawer underneath, thereby doing away with any confusion in cleaning the crates. The birds are fed on a wet mash consisting of 25 parts corn meal, 50 parts oat middlings, 25 parts bran, besides grit and a prepared chick developer containing large amounts of dried blood. No water is fed except that used in mixing the mash.

In two weeks a gain of one pound to the bird is usually secured and when sold on the city markets a difference in price of from two to three cents a pound is obtained. Such fowls are easily recognized by the experienced buyer on account of their pale combs as compared with the yard run birds' comb of bright red.

What this man has done is simply a repetition of the work done by succesful feeders in all branches of animal husbandry; and even in face of the fact that he has handled egg-laying, rather than the heavy meat type fowls, the success obtained by his system demonstrates the value of better fitted market birds.

In looking toward the future of the poultry industry it is almost certain that this subject of more and better chicken meat will become an ever-increasing one in the minds of progressive poultry men as well as consumers so long as our meat situation remains in its present chaotic condition.

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With sealed bonnet, in all kinds of weather and condition of roads, never has an automobile been put to such a test and finished with a perfect score.

See this car on our floor, ride in it and drive it.

GET THE PERSONAL TOUCH

Osen-McFarland Auto Co., 661 Golden Gate Ave., San Francisco. First and St. James St., San Jose.

Turkeys Wanted

Our sales on Poultry for the month of November were $64,386.85. All this business came to us on a CONSIGNMENT BASIS. Is there ANY GOOD REASON why we can't handle your TURKEY SHIPMENTS?

Certainly you are interested in getting GOOD PRICES. Our large poultry trade needs TURKEYS EVERY DAY in the week. Therefore we solicit your REGULAR WEEKLY SHIPMENTS.

We remit EACH WEEK at ACTUAL SALES less 8 per cent commission.

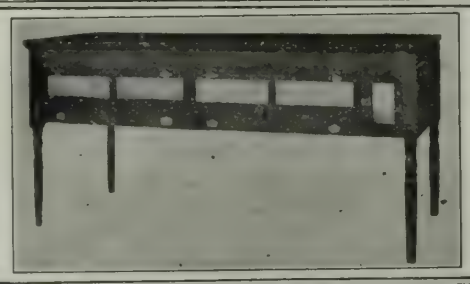
We will give $50.00 in prizes to the poultry raisers guessing nearest the amount of our sales for the month of December; $15.00, first nearest guess; $10.00, second nearest; $5.00 each next five nearest guesses. The names of winners will be given in this paper after January 1st, 1915.

Write us stating number turkeys you have for shipment now or for Christmas market.

HARBAUGH & COMPANY

238-242 Davis St., San Francisco, Cal.

Mention this paper when writing or sending your guess.



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THE VICTOR BROODER RAISES EVERYONE

Our Brooder is perfect; so is our Incubator. Send for free catalogue.

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San Francisco Poultry Show.

[Written for PACIFIC RURAL PRESS by Paul Parker.]

Breeders and poultry raisers who have seen the plans for this year's show at the Auditorium say that it is going to beat anything ever given on the Coast. On account of the increased floor space many new features were included in the exhibits, which in a small building would never be possible. Also the lighting and ventilation have been given special attention. On account of the powerful battery of lights encircling the building every entry will be flooded with light. While the ventilation is perfect, there are no drafts, and heated waiting rooms afford excellent places to rest in.

Preparations are being made to handle the enormous crowds that will throng to the show. It being the central point for poultry raisers in California, visitors are coming from all points in the State. Because of the diversity of the features the general public is greatly interested.

The famous Buff Cochin hen, Goldy has been entered in the show. This bird is one of the most perfect specimens of Buff Cochin in America. Mrs. C. Du Jardin, the owner, has refused $2,500 for her. Every setting of her eggs bring $60, or five dollars apiece. Another special will be the pigeons of Paul Barnum, the "Burbank" of the squab industry.

Mr. Barnum will show the results of six years of careful culling, selecting and breeding 10,000 pigeons. He has bred his birds down to the point where they are pure red in color, average 12 squabs a year, that have snow-white flesh and weigh exactly one pound when 30 days old.

Equally interesting will be the exhibit of edible frogs and turtles. Many varieties of edible frogs are to be found in the waters of California, and those acquainted with the market requirements find it a very profitable business gathering them. Here will be found the finest specimens of each variety. Then the egg show should prove of great value to the poultry raiser. An expert has been engaged to candle eggs in order that visitors might see how to grade their eggs before shipping, for many thousands of dollars are lost the producer each year through carelesness in shipping his eggs. "Extras" and eggs that are docked for irregularities in shape, size, color, condition of shell and the like, will be displayed for the purpose of contrasting the good and the bad.

A free sales secretary will be on the floor to assist buyers and sellers, and no charge will be made for his services. The secretary knows all the breeds exhibited and should prove a valuable adjunct to the show.

The yard system is another feature. Birds will be exhibited in pens of ten so that it is easier for the onlooker to size up and contrast the different individuals.

The dressed poultry exhibit will be instructive to those who raise fowls for the market. Methods of killing, picking and fixing the carcass so as to make an attractive appearance will be shown. Also, there will be dressed rabbits on exhibition.

Nor are the kiddies to be forgotten, as several hundred children's pets will be shown. The exhibits range from lizards to deer and are divided into 22 classes. Dr. F. W. D'Evelyn is judge of this department. The State Farm has loaned a fine exhibit of California game birds and animals. There will also be several tanks of trout and other game fish.

The judges of the show are C. S. Beyers, Harry H. Collier, N. E. Luce, A. H. Currier, Jas. C. Doolittle, W. J. Head, L. Regner, Arthur W. Petty and Dr. D'Evelyn.

THE OAKLAND POULTRY SHOW.

[Written for the PACIFIC RURAL PRESS by James Yates of Modesto.]

The largest show of the season was the Oakland show, both in attendance and number of entries.

Quite a number of sales were reported at fairly good prices and no doubt a good demand will follow those who had birds on exhibition.

People crowded the show room every afternoon and evening and all the incubator and brooder concessions were crowded; also the Rogers Mfg. Co. concession—they manufacture the vermin-proof houses.

Some of the strongest classes were barred and white Plymouth Rocks, buff and white Orpingtons, black and white Minorcas, R. I. Reds, white Wyandottes, Anconas, Butter Cups and black Langshans. The water fowl and turkeys were well up in quality and quantity. The bantams attracted a great deal of attention. Among them were birds that had been winning in the East. The display in the show-window was made by the State game farm at Haywards. It consisted of pheasants, wild ducks, valley quail, and other rare birds; in fact, the whole show was so interesting that one could spend hours and see something new each look.

The pigeon, rabbit and game display was on the second floor and there was no vacant space in the building.

There were about 1,400 chickens and about 1,200 pigeons and rabbits. C. W. Presher, of Oakland, breeder of barred Plymouth Rocks, made creditable winnings. At the Stockton show he had won special for the best barred Rock cockerel.

Mrs. E. B. Martin of Downey, the well-known white Leghorn breeder, showed a big string of birds and swept the deck in prizes, getting 1st pen and 1-2-3 in all the singles. She also won special for the best bird in the show.

M. J. King of Oakland, showed some of his "Progressive Strain" of white Rocks, winning 2nd pen in hot competition, also 3rd cock. At the San Jose show they won 1-2 pen, 1-2 hen, 1 cockerel and special best display.

L. W. Potts of Berkeley, Ancona breeder, 1-2 cockerel, 1-4 hen, 1-4 pullet, 1-3 pen, special best male and female in Anconas.

Wm. O'Connell of San Francisco won 1st hen and shape-and-color special, with pullets competing, on a Rhode Island hen. She is a grand bird.

Wm. Larm, Alameda, won 1st cockerel in rose combs, and 1st pen in San Francisco last season.

Mrs. H. W. Greeg of Oakland won 1st pen in blue Andalusians.

Geo. E. Morgan of Oakland, Columbian Wyandotte breeder, has excellent birds of this comparatively new breed; he won 1st cockerel, 1-2-3 hen. He has no stock for sale.

H. and F. Mortensen of Suisun has a good commercial flock that has been selected for nine years for eggs.

C. R. King of Haywards, one of the largest breeders of fancy and utility pigeons on the Coast, won two $50 cups, and seven other cups for a fine display.

E. S. Lindblade of San Leandro, one of the committee of the show, showed two nice white Rock pullets. Mrs. Lindblade has fancy cats.

R. W. Stawetski of San Jose, white Wyandotte fancier, won 1st and special on cock, 1st and special on hen, 1st cockerel, and four firsts at San Jose. His birds have the Wyandotte shape and good color. He also breeds Indian Runner ducks. Mrs. O. E. Thomas, Oakland, breeds fine partridge Rocks and black Minorcas. The partridge Rocks won 1st cock on one entry in good competition. Last year in San Francisco she won 1-2-3 pullets and 1st hen. She displayed a utility pen of black Minorcas.

POULTRY NOTES.

A very successful poultry show was held at Bishop, Inyo county, last week. A dispatch from that place says that there were more birds exhibited this year than ever before and that young breeders took a strong interest in the show.

The Fred L. Hilmer company of San Francisco have been awarded the contract for marketing the eggs of the Sonoma County Poultry Producers' association next year. The contract allows for a profit sharing clause by members in the cold storage business.

During the three days that the Contra Costa County Poultry association show was under way at Concord recently, members of that association did $2,000 worth of business. The show itself was said to be the best one ever held by the association.

Shipments of turkeys from Orland were smaller this year than those of last year, although over $6,000 worth were shipped to the bay cities this year. A number of the turkey men there are said to be holding their turkeys back for the Christmas markets in order to secure better prices.

With the object in view of fattening poultry for the city markets, in much the same manner as outlined in our first page article this week, Bernard Winn has leased a place near Hayward where he will establish a fattening plant. Milk, together with a mixture of meals and grain, will constitute the main part of the rations.

Turkey raisers of Fallon, Nevada, shipped more turkeys this year than ever before, according to reports from that place. There were 35,204 pounds shipped by express at prices averaging about 20 cents a pound. A great many birds have been held over for the later markets in the hope of securing better prices.

Poultry Breeder's Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

TO THE POULTRY FARMER—We now have under construction a modern Hatchery, and are booking orders for BABY CHICKS from our heavy laying strains of S. C. White Leghorns and White Plymouth Rocks. We solicit your order for 1915 delivery, and know that you will be well pleased with the high quality of our stock. Write for prices on Sept. and Oct. hatched pullets, and year-old hens for breeders. Hopland Stock Farm, Hopland.

S. C. WHITE LEGHORN BABY CHICKS—from my pure-bred flock S. C. White Leghorns, carefully selected for laying and standard qualities, $9.00 per 100, $85.00 per 1000. A first-class chick at a reasonable price. Eggs for hatching, $5.00 per 100, $45.00 per 1000. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal., San Luis Obispo Co.

MACFARLANE STRAIN White Leghorn Eggs. $5.00 per 100, chicks Jan., Feb., $12.00, afterward $10.00. Order now, any quantity Cockerels, $2.00; White Rock eggs, chicks, cockerels. Write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. N.B., See article about us by Prof. Adams. U. C., in October "Poultrycraft."

MAMMOTH BRONZE TURKEYS—Large reductions offered on old stock for short time only. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

ORDER NOW—Thoroughbred Bronze Turkeys from largest Turkey Ranch in Stanislaus county. Large Spring gobblers and hens for breeding stock. Address, Crow's Landing Turkey Ranch, Crow's Landing, Cal., Box 227.

HICKS JUBILEE HATCHERY—36,000 capacity this season. Now booking orders. White Leghorns and Black Minorcas our specialty. Instructions in caring for young chicks free. W. J. Hicks, R. 2, Petaluma, Cal.

OUR SPECIAL White Leghorn Chicks are well hatched and strong, from healthy, vigorous breeding stock. Book your order now for coming season. San Jose Hatchery, 373 Meridian Road, San Jose.

PINE TREE POULTRY FARM, Los Gatos, Cal.—Hatching eggs from S. C. White Leghorns. Selected stock. $6 per 100; $50 per 1000. Order now. No baby chix.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 398, Los Gatos, Cal.

MAMMOTH BRONZE TURKEYS—Strong, vigorous, well-marked Toms and Hens from the best blood of prize-winning and utility stock. Prices reasonable. Geo. A. Smith, Corcoran, Cal.

INCUBATORS—50 machines, second-hand, perfect condition, cheap; 5 dozen R. I. Red pullets; 3 dozen Plymouth Rock; 2 dozen Black Minorcas, Pullets. Stansfield, 3301 E. 14th, Fruitvale, Oakland.

MULICK'S MAMMOTH BRONZE TURKEYS.. 1st State Fair, Petaluma, Stockton, Sacramento, Willows. Young stock for sale. N. E. Mulick, Willows, Cal.

PHEASANTS—Ringneck and Golden. Ready for breeding pen. Eggs in season. T. D. Morris, Agua Caliente, Calif.

DAY-OLD CHICKS—WHITE LEGHORNS. Good stock. Selected for seven years. Circular free. H. A. Schlotthauer, Exeter, Cal.

THOROUGHBRED White Holland Turkeys—Prize winners. Hens, $4. Toms $8. U. S. Smith, Tulare, Cal.

WHITE ROCKS—BABY CHICKS. Booking orders now for Fall or Spring delivery. Mrs. J. B. Tupper, Ceres, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

TOULOUSE GEESE—direct from Philadelphia. Win everywhere. Prize Rhode Island Reds. M. F. Giddings, 245 Tokay St., Lodi, Cal.

TRAPNESTED LEGHORNS, White and Buff Stock, eggs, chicks. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

HAYWARD HATCHERY—Booking orders for Fall and Spring day-old chicks. S. C. White Leghorn specialty. Free price list. Box 688, Hayward, California.

DAY OLD CHICKS—Hoganized Egg Machines. We are booking orders for spring delivery. Hans F. Mortensen, Suisun, Cal.

THOROUGHBRED SINGLE COMB WHITE LEGHORNS—breeding and foundation stock eggs for hatching. Rancho Del Martino, Mrs. E. B. Martin, Downey, Cal.

STAWETSKI'S White Wyandottes and Indian Runner Ducks. Winners Oakland, San Jose. Stock, eggs. R. W. Stawetski, San Jose, Cal., R. 2.

PIGEONS—Largest breeders in the West. 12,000 to select from and for free catalog. King Lofts, Box 685, Hayward, Cal.

INCUBATOR CHICKS—White Rocks and White Leghorns. High class stock. Send for booklet of prices Mahajo Farm, Box 597, Sacramento, Cal.

MAMMOTH BRONZE TURKEYS—Early maturing, prize-winning stock; also Guinea fowls. Stock and eggs. John G. Mee, St. Helena, Cal.

DIABLO WHITE ROCKS— EGGS FOR HATCHING. Special exhibition matings, $7.50 per 15; utility, $2 per 15; $10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. G. W. Suits, 378 Bandini Ave., Riverside, Cal.

PREMIUM STRAIN—Barred Rocks are the best for quality and utility. Stock for sale. Orders booked for eggs. Folder free. Pyke & Davis, Oroville, Cal.

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

FOR SALE—Pure bred Rhode Island Red Cockerels. M. Worley, Palermo, Cal.

FINE BARRED ROCK COCKERELS for sale for $3.00 each. G. L. Hawley, Madera, Cal.

LANGSHANS — Best on coast. Stock. Settings booked now. Lohr, 689 Kansas St., San Francisco.

ORPINGTONS—BUFF AND WHITE—Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

Range-Bred Turkeys.

[Written for PACIFIC RURAL PRESS]

The Sunday before Thanksgiving is turkey shipping day in Tehama country, for it is then that the thousands of range-fed "turks" start on their way to the city man's Thanksgiving table. Not all of the turkeys raised there are marketed at this time, though, for there is Christmas and New Year's also with their demands on the turkey grower.

Turkeys, as most of us remember them, were the tall, lanky birds that were continually perching on top of the buggy shed or other high point, but in this country around Corning they are more easily compared to sheep than anything else, for they are herded in flocks, sometimes as many as 2500 being owned by one man.

From this it will be seen that turkey raising here is a business in itself, and sometimes a difficult one, too, for much depends upon the weather and the ability of the grower rightly to manage his band.

As with all kinds of farm animals much depends upon the breeding of the birds, experience in this district proving pretty conclusively that the Mammoth Bronze turkey is the one most favored by market men and as satisfactory to the grower as any other breed. This blood is built up in the flocks by the purchase of males from breeders who make that end their specialty.

The number of hens kept over from fall to spring for breeding purposes depends entirely upon the number of turks to be hatched the next season. If these birds are kept in good condition during the early and midwinter months, they begin to lay early, but if the hens are not well fed and cared for during that time, late laying is the rule, for it is a well established fact that a turkey hen will put on only so much fat, and then begins to lay, so it is in the hands of the grower as to when his hens start to lay.

Where early laying has been the rule the young birds are hatched from February to April, and they have a good chance of reaching the early Thanksgiving market; but those hatched as late as May are scarcely ever ready till the New Year's and Washington's Birthday markets.

It is only in exceptional cases that incubators are used for hatching, and even then most growers try to have hens to raise them with, for the troubles of brooding are greatly lessened and the hens later teach the young ones to forage for themselves.

In setting the hens from 15 to 17 eggs are given to each bird. For the first few days after being hatched the young bird's ration consists of hard-boiled eggs, bread crumbs and milk. After this cracked wheat and gyp corn are used for a considerable time.

If the weather be bad and the chicks have been hatched early, they are kept under shelter till they are about the size of quail, when they are turned out onto the grazing lands with their mothers. As everyone who has experimented knows, rain is one of the most serious factors governing the young turk, and for this reason great care has to be exercised at this stage.

Hawks and coyotes are other factors which have to be guarded against, the former being especially bad when the birds are small, but of little menace afterward.

Cheap feed is the biggest single thing with turkeys, and for that reason chiefly so many are grown in Tehama county. There are large areas of uncultivated land which provide the main feeds: weeds, weed seeds, and grass-hoppers. It is the last named feed that all turkey men look for most, as a poor hopper year means a poor turkey year. At such times a dry mash has to be supplemented, composed of bran, beef scraps, gyp corn, and barley. This, however, makes feeding expensive and is done only in extreme cases.

At times when the hoppers are bad in the alfalfa districts, turkeys are driven into the fields to clear them up, but in the main the plains furnish most of the early feed, though small fields of alfalfa are usually found on the ranches where turkeys are being grown in any quantity.

The manner of herding the flocks depends upon their size, small flocks usually being looked after by children or the farmer himself, but large bands are often handled by a man and a dog, in the same manner that sheep are herded. Any dog that will make a good sheep dog wil make a good turkey dog, a cross between a collie and a cur usually being best.

At night the bands are driven to the night quarters, perches many times being made for them by driving forked posts into the ground and resting poles in the crotches. Each breeder has his own mark which is either a foot mark or a painted mark on the wing.

After the grain fields in the section have been harvested, the turkeys are turned onto the stubble fields, and it is here that they begin to take on flesh rapidly. In cases where stubble cannot be secured, grain has to be fed, for a great deal depends upon the feeding at this stage if large, heavy turkeys are to be secured.

The size of the turkey at marketing time naturally varies a great deal with the feeding and breeding, hens usually weighing 8 to 11 pounds, and gobblers 12 to 18 pounds.

WANTED—HAMBURGS.

To the Editor.—Can you tell me where I can get a good Hamburg cockerel. We want to change the rooster.—S. D. H., Bowles.

[Our best information is that you will have a poultry show in Fresno, Dec. 7-19, at which you can surely find breeders of Hamburgs. This is one of the great advantages of poultry shows—you can meet the leading breeders from your section and others with the expense only of a trip to the show. We take this opportunity of calling attention of Hamburg breeders to the desirability of enrolling in our Poultry Directory. We would also suggest that S. D. H. insert a liner in the Directory. One insertion will probably bring several answers.—H.]

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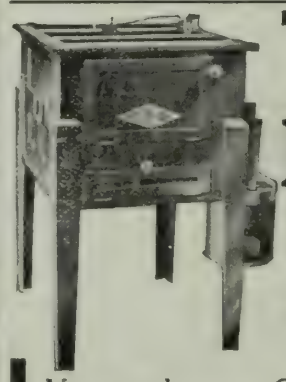

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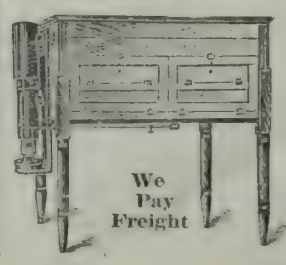

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Poultry for Profit

(Continued from page 553.)

bakery man would have had to appear in court anent that little bit of makeweight. But here we allow ourselves to be fooled into buying things underweight and undersized, or anything else before making a fuss. Fact is we allow ourselves to be hypnotized by our own eyes. If a thing looks nice we buy it and pay for the privilege regardless of quality. And that is where a good part of the high cost of living comes in. So many things can be made to look nice and attractive and yet their quality is not as good as some that do not look so good.

Raising Turkeys.—In the Pacific Rural Press of Oct. 31, there was an item stating that Mrs. Florence Richardson claimed to have raised every turkey hatched. Mrs. Richardson writes me "that it is a perfectly true claim." She says: "In the spring I had two turkey hens that we had saved to eat, and as they wanted to mate I let them do so, and from these two hens I raised to salable age eighty-four birds, some of them weighing when killing time came close to 17 pounds. Some of my neighbors say I have good luck, but I am not much of a believer in luck and would hate to think that all my care and work, feed etc., had nothing to do with my success."

Later I am going to give you turkey raisers this sensible woman's recipe for raising turkeys, and will tell some of these "luck" people how to do it.

Sowing Green Feed.—Just at present what we should all do is clean up for winter, sow some sort of green feed, and when it comes up turn the chickens out and let them enjoy a spell of "back to nature" life.

It does them all kinds of good, just as a camping trip does us good; it builds up the hen for the winter and spring work.

This is California growing season, and if you want cheap green feed, either oats or barley are the cheapest. We have recently sown an acre or more to barley and mustard; the barley, of course came up first and will be a protection and shade for the mustard. The small mustard plant gets sun-burned here so we mixed it with the other grain for protection.

Antiseptics for Prevention.—A little antispetic now in the water may prevent trouble from germs that are always pretty active in the fall months. Some people use "Germozone" (Permanganate of potash and bluestone). Either of these are alterative, antiseptic, and astringent, and just a little of them changes conditions.

Late Pullets.—This is the month when pullets should begin laying in large numbers, but from all reports they are not answe ing the call very wa lue. quires a little

If the weather be feed to com- chicks have been hatche success will are kept under shelter tuld rather about the size of quail, and lay are turned out onto the to lay, lands with their mothers. As early one who has experimented k job. rain is one of the most serious ex- tors governing the young turk, an turns the trick and brings the eggs.

Double Mating—In the Rural Press for last month you spoke about a Standard Book on Poultry; where can I get one? Is it necessary to have what you call a double mating on all kinds of poultry? Do you have to have one for your kind of birds? I saw some at the show here and they looked real good to me. Please help out a novice and a four-year reader of the Press.—C. H. W., San Jose.

[I certainly will help out any reader interested in good stock, whether it is my kind or not. The book mentioned is not a book on poultry, but a "Standard" set by the "American Poultry Association." It describes the different breeds to make individuals eligible for competition in the poultry shows. You can get one from Chas. C. Harker, at San Jose. The price is $2. In regard to the double mating, it is only necessary on birds that are called parti-colored—that is, birds having two colors in the feathers. These are all called parti-colored and require double mating in order to get good specimens of male and female. Towards spring I will give directions for double mating, at present it would not be of much interest as this is out of season for mating. No; I do not have to double mate because my fowls are all solid colors, being all white or all buff.]

Hen with Contortions.—My hen lost all her feathers in a night, and since then she has been going through the funniest contortions, side-steps and backs when she approaches food; comb and wattles are red. One hen died after going through the molt. She was fat, but had no eggs in her. On the inside, left side, outside of the fat was a dark streak running almost the entire length of it. Can you tell me what ailed her?—Mrs. A. C., Tonopah.

[I think the first hen is suffering from the shock of losing all her feathers at once. Feed her well, give a few drops of tincture of iron in her water, say half a spoonful to a quart of water, and feed her a few meat scraps from the table and she will be all right. The second hen was evidently too fat and has died from apolexy.]

Combs Not Red.—My black Minorca pullets' combs are not as red as I think they should be, yet their feathers are glossy and they eat well. They have plenty of green feed, clean water, good run, and a well balanced ration, sprouted barley and corn twice a day, but they have not had any charcoal. Is that necessary, and can you suggest any remedy to brighten the comb?—Mrs. L. K., Yountville.

[Charcoal is useful only as a cleanser in case of sour crop or any diarrhoea in the intestines. It has no direct influence on the comb. Unless I knew how old your pullets are and whether they have commenced laying, it is not very satisfactory to say, because I would simply be guessing. If the pullets are pale after they commence to lay, add a little tincture of iron to the drinking water, half a teaspoonful to a quart, or red cinchona tonic will do the work; but if the pullets have not laid there is nothing to be done but feed well and wait for nature to work the change. You seem to be feeding well anyway, so I think they will turn out all right.]

Starting in Ducks for Market.—I want to get a bunch of good ducks. I want to raise eight or ten hundred young ones for market, and turn them loose in plenty of water with feed in the water and expect them to make their own living. Which would be the best breed to handle in this way, and how many old ducks would I have to start with to raise this number? What breed would be most sure of success and most salable to handle this way? Would it be best to buy an incubator? Where can I get a good book on the raising of ducks?—E. C. D., Gridley.

[The breed that would stand that sort of raising best is the colored Muscovy, but when it comes to sales, —well, it is another question. The Muscovy is a grand duck for hardiness, but the odor and flavor of musk is retained all the way to the table. The Pekin is the hardiest and most salable duck there is, in fact, no other would do at all under the conditions you mention. The Pekin duck is good for at least 150 eggs in a season, though they will not all be laid at the right time for hatching. You will need a drake to every five ducks and if you let them run in the water you will never get enough eggs to tell the story. It would be absolutely necessary to keep your laying stock yarded, until after they lay, then they could be turned out. Yes, you should have an incubator and a fairly good sized one at that to raise so many ducks; should judge from fifteen to twenty ducks with a drake for every five would furnish eggs enough for that number. I believe the book now being advertised by the Press will give you the best information for this Coast. "Rankin" is the best known authority on ducks, he has large duck farms on Long Island, but the new book tells you as much as Rankin will, and it talks for California instead of Long Island. With Pekins and the right man behind them, success would be tolerably sure, but the ducks can only do their part; the rest must perforce be up to the man or woman.

RICE FOR POULTRY.

To the Editor: Will you kindly state through your paper the feeding value of rice, compared to wheat, as a food for chickens? Will rice take the place of wheat? The price of cracked or broken rice is less than for wheat.—W. A. S., Berry Creek:

[Rice has approximately the same feeding value as wheat for poultry feed, but it is more necessary that other grains be fed in connection with it than is the case with wheat, since it does not contain such a variety of nutriments as wheat. While it is possible to make the grain ration 80 per cent wheat, it is doubtful whether more than 60 per cent of rice should be used. Rice is more fattening than most of our interesting work and not at all hard to manage, but it requires a good deal of work in the early stages. The new book will point out how to feed your breeders and raise the young ones.]

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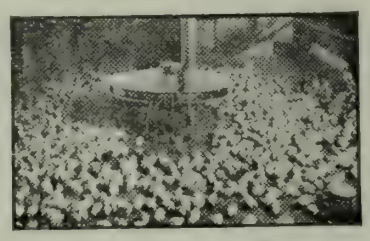

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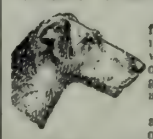
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Practical Incubation and Brooding.

[Written for PACIFIC RURAL PRESS]
By James D. Yates, Modesto.]

I will not attempt to tell all the details of these two very important subjests in this article, but will give some of my own experience. We all admit that brooding chicks is probably the most difficult part of the poultry business.

Many think that if the chicks get past the three weeks' age in safety that practically all danger is past, but experience has taught me that while that is an important stage there are other ages just as important. I have a hatchery at Modesto and will give my experience in incubating. I have used eight different makes of incubators and have let all go but two makes of the hot water machines. I have a number of these machines and they run uniformly, and the results are usually satisfactory. My incubator house is half under ground and half above. The side walls to the top of the ground and the floor are of cement.

Above the ground I have double walls made of lumber, also a wood ceiling overhead. My windows are made of light canvas on a frame that I can adjust in opening, according to how much ventilation I want. I have electric light for testing, etc.

The light canvas gives enough light on the machines and it also gives some ventilation, but very little sun heat. I have other ventilation also near the bottom of the house, also in the ceiling, and all are adjustable according to how cold or how windy, arranging the ventilation to suit the weather. With this kind of a house the labor is reduced to a minimum.

For the farmer or poultry man who hasn't a house built for the purpose the basement or cellar is the best, and a room where no sun shines in and where there is no stove is the next best place. At any of these places the incubator should run even enough to not be looked at during the night. Some women make an incubator as much work to watch in the night as a young baby, and it is all uncalled for.

I have a number of machines and I see them about nine o'clock in the evening and never bother with them again till next morning about seven o'clock I look at my machines on an average of about 5 times a day, and when the night is going to be cold I always turn each flame up just a little, usually about one-eighth of an inch.

For those who have never run an incubator before, it is well to run it two days before putting in the eggs. Read the directions that come with the machine and understand them. I use the regular grade of kerosene which sells for 10c per gallon. I have burned several barrels of it, and I have never had a particle of trouble with the oil, or a lamp of the machines. I am using it now and I have had machines that were not cold any time during February, March, April and May. I fill my lamps at noon time. There are two or three reasons for filling at that time: first, because you do not turn any eggs at that time and there is no danger of getting the oil on any of the eggs; second, if you fill the lamps regular at this time of day, you bear it in mind as a separate piece of work and it is not so easily forgotten. If you do forget it at the noon hour you have all afternoon for it to come into your mind.

After the third day I turn and air the eggs morning and evening, airing five minutes at first and increasing the time gradually till about the 15th to 18th day. I air the eggs half an hour or more, if the rooms is comfortably warm.

On the 18th day I spray the eggs with warm water, using a small hand sprayer. I have had splendid hatches before I began to use the spray, but it surely can do no harm on the 18th day. I only spray till tiny drops are formed on the shell, then put the tray back in the machine at once.

When the chicks begin to hatch do not open the door till all are hatched. If you do, the moment the outside air comes in contact with the hatching chicks it dries them to the shell.

When all are hatched, take out the trays, open the ventilators of the machine, and if it is a 500-egg machine fasten the door so that there is a quarter of an inch opening. Keep the chicks in the incubator 24 hours. I ship chicks in the boxes made for that purpose. The boxes hold 100 chicks, divided into four compartments. They carry fine in these boxes and will go a long ways safely. The method of raising chicks varies according to how many you intend to brood.

If you are to brood 1000 to 2000, you will want to take methods that will reduce the amount of labor. If you don't you will do but very little else but care for the brooding.

If you intend to brood 100, 200 or 300 it is well to brood them in reliable heated brooders. The round brooders are coming into favor fast as they have no corners, and the chicks can adjust themselves to the heat.

If the weather is good, that is nice sunny days, you can brood chicks in lots of 75 in fireless brooders and get fine results, but if the days are cold you will have to have some kind of heat. I know one party that used an oil stove in day time to keep the chicks comfortable. This requires a good brooder house.

If you are going to brood 600 to 1,000 get a larger capacity brooder, preferably one to accommodate the 1,000 and go according to the directions of the maker. With the larger broods you should be at the brooder house each evening just at the time they are going to bed and see that none crowd in the corners.

A good way is to put one-inch mesh wire, one foot high, in a large circle around the brooder while the chicks are small. This is used when a brooder stove is used. If you use the lamp-heated brooders take care of the lamp just as well as you would the incubator lamp.

A good commercial chick feed gives uniform and satisfactory results. After the chicks are 10 days to two weeks old be sure to keep the proper amount of beef scrap in the feed. This is one place where many fail in raising young stock. They must have the proper amount of animal protein to properly develop their bodies just as the laying hen must have the proper amount of animal protein to lay the amount of eggs she should. The growing pullets should have 15 to 20 per cent beef scrap or fish meat meal to get them to laying at the proper age, otherwise they will be unprofitable.

There is one more point I want to mention about brooding and that is teaching or getting the chicks to roost before they get too big.

If you leave the chicks in the brooder too long, a thing which is often done, they are crowded and sweating and before you realize it they are crowded for room. This sweating soon brings on cold and roup. You must teach them to roost early. One sure way to do it is to put little roots or slats so close together that they can not get down through them and put on a frame six inches from the floor. Put a burlap sack across the corner so they cannot crowd in the corner.

I like to keep the dry mash in the hopper before the chicks all the time and put the grain in litter. Study the wants of your chicks, give them plenty of green feed and proper amounts of animal protein and they will repay you.

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A little boy who has to play
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So when they say, "Oh, do be still,"
And, "Don't make such a noise,"
I go straight to the kitchen; our
Bridget she just loves boys;
She seems to know the things to do
To make you have a good time, too.

She lets me cut out brown-bread men
And cookie stars and moons;
And, if she's made some chocolate cake,
I always lick the spoons;
And, 'fore she starts to sweep the room,
She rides me round upon the broom.

The kitchen's fascinating for
It's full of lively things;
The faucets run, then drip, zip, zip;
And, while the kettle sings,
I beat the dish-pan with a spoon
And Bridget dances a "breakdoon."

MARY ELLEN'S NAUGHTY DAY.

By Mary C. Bartlett.

Mary Ellen lived in the country, not far from Grandmother Bent's house. There were no houses between, but there were green fields and trees and wild flowers. Sometimes one met a carriage or a wagon, and quite often an automobile.

Mary Ellen was a very little girl, but she was sometimes allowed to go alone to Grandmother Bent's. On such occasions mother would telephone to the other house, "Look out for Mary Ellen," and then she would give the little girl a good-bye hug and kiss, and, with many injunctions to keep strictly to the side of the road, the child would start upon her little journey. She was sure to see a kind face watching for her from Grandmother's window, or perhaps Aunt Edith would come to meet her. Mary Ellen was the only grandchild, and they all loved her very dearly.

It was strange that a little girl who had so many to love her shouldn't always be good; but, alas! Mary Ellen sometimes had her naughty days, and this was one of them. She was cross to her mother, and, when reproved, only pouted the more. She shook Rebecca, her much-loved doll, because her dress wouldn't hook straight, and made herself so generally disagreeable that her mother at last lifted her up to her high chair, and bade her stay there until she could be a good little girl.

"I want—to go to Grandmother Bent's," whined Mary Ellen.

"No, indeed. No visit to Grandmother's to-day."

Mary Ellen made no answer, but her face was full of ugly wrinkles, and she kicked the chair with her naughty little feet. She didn't look a bit like sweet little Mary Ellen as she was sometimes called.

Her naughty thoughts were busy. Never had she wanted so much to go to Grandmother Bent's; and, when her mother went out to the back garden with her watering-pot, she suddenly stopped crying. Usually she would have followed her mother, chatting gayly all the while,—but now—

"I will go to Grandmother Bent's," she said to herself, "I will!" And she slid down from her high chair, walked up to the telephone, and called loudly into its black depths, "Loot out for Mary Ellen." Then she picked up poor Rebecca from the floor where she had thrown her, and started off on the run.

Her mother was busy at the other side of the house as the little girl well knew. No one saw her. It was a lovely April morning, but the air was cool Mary Ellen shivered a little, but she hugged her dolly the closer and trudged on. Aunt Edith did not come to meet her, and there was no kind face at the window. Mary Ellen felt aggrieved. She entered the house with a little stamp of displeasure.

The only occupant of the kitchen was her Uncle Rob, a youth of sixteen.

"Hullo, Tot!" he exclaimed, "where'd you come from?"

"From my house."

"Why didn't you telephone?"

"I did," replied Mary Ellen, with dignity.

"Who did?"

"I did."

"O—h! How's your dollie?"

"She's cold."

"I hope she isn't going to have pneumonia," said Rob, with great solicitude.

Mary Ellen hugged her closer.

"Where's grandmother?" she inquired.

"She and Aunt Edith are out to the barn. They'll be right in.'

"I'm going out there," said Mary Ellen.

"You'd better leave Rebecca here," advised Rob. "It's cold out there."

Mary Ellen hesitated.

"I'll tell you where to put her," said Rob. "Mother's left the oven door open. Clap her in there. It's nice and warm."

Mary Ellen held her little hands for a second at the oven door. It certainly was lovely and warm in there. Wrapping Rebecca in a piece of old cloth, which Rob found for her, she slid her into the oven as if she had been a pie. Then she ran out to the barn, while Rob sauntered off down the road.

Grandmother Bent and Aunt Edith were much surprised to see their small relative, and by skilful questioning at length surmised the truth

The errand to the barn was soon accomplished, and all went back to the house; but before they reached the kitchen door Grandmother exclaimed, with an expressive sniff: "Why! What's burning? Where's that smoke coming from?"

She rushed into the kitchen. "What's this in the oven?" she cried, and she stooped and pulled Rebecca from her perilous position.

Poor Rebecca! She was certainly warm enough now. No one could touch her. Her clothes fell off in little black pieces Her cheeks, once so rosy, were burned and brown. The lustre had gone from her eyes, and her smiling lips were nothing but black lines. Grandmother took her up very gingerly, and carried her out on a plate to the shed to cool. Poor Rebecca! It was too much for Mary Ellen. She screamed in dismay.

"I'm sorry," said Grandmother. "Who put her in there, deary?"

"I did. Rob said she'd get warm."

"The scamp!" Grandmother's tone was meant to be severe, but it was very hard to be severe where Rob was concerned.

At this moment the telephone rang. "Is Mary Ellen there?"

Yes."

"She's a very naughty girl. Please send her home at once."

"Don't punish her," called Grandmother Bent.

"Why not?"

"You'll see. Go home, honey, as

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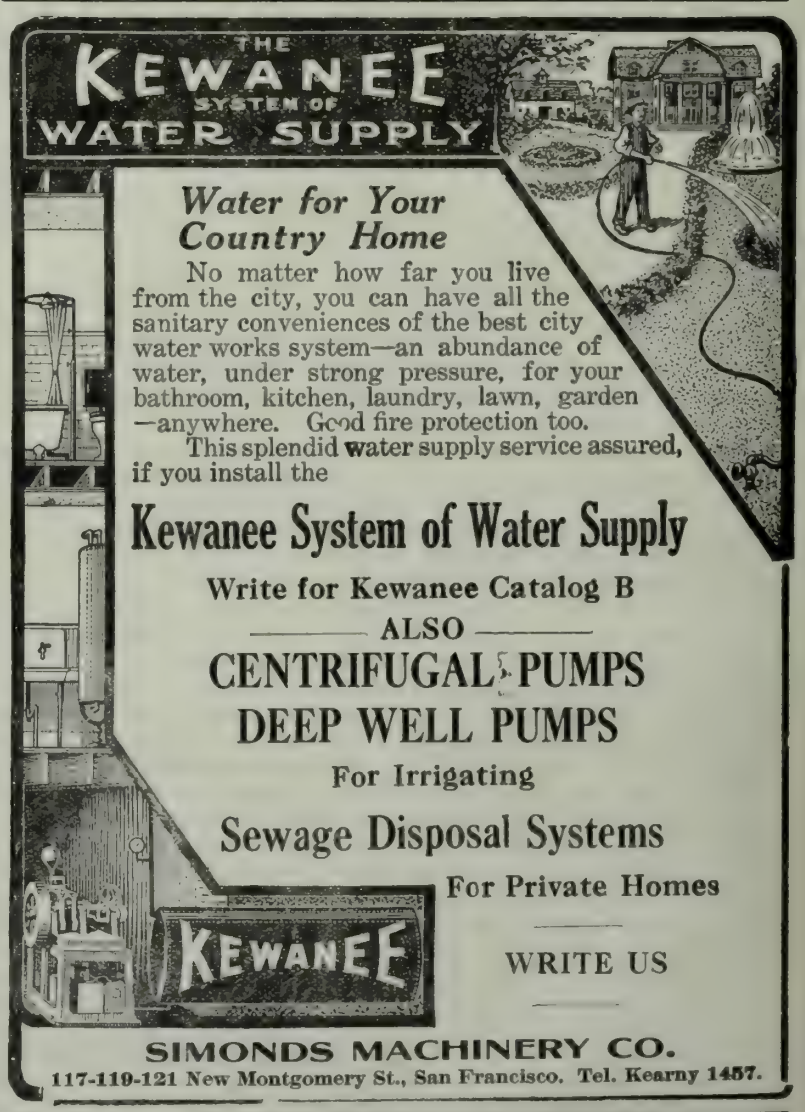

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quick as you can," she said to the sobbing little girl. "Aunt Edith will go, too. Take Rebecca with you," she added, as an afterthought. "She's cool enough to handle, now." She put Rebecca into the arms of her little mother as she spoke.

"She's— all— peeling," sobbed Mary Ellen; and, indeed, the whole of Rebecca's clothing and many little pieces of her person had peeled off, so that it was a sorry looking doll that the little girl carried in her arms on her homeward way.

Aunt Edith could have cried herself as she looked at her heart-broken niece; but there was a comical side to the tragedy, nevertheless.

It was a very severe face that was watching at the window for Mary Ellen's return, but it grew softer when the child rushed into her mother's arms, holding up the disfigured doll.

"Poor Rebecca! How did it happen?"

"In the oven. She was cold. Rob said she'd get warm!"

The two grown people looked at each other. Not for worlds would they have laughed.

"I must run back," said Aunt Edith at length. "We're awfully busy." Then she added, in a low tone, "You won't punish her."

"Of course not. She's had her punishment. Poor little girlie!" was the reply.

Mary Ellen is to have another doll upon her birthday, which will soon come,—a more beautifull doll than Rebecca, if such a thing could possibly be. Let us hope that her days may be long in the land, and that she may be a great comfort to her little mother.—Christian Register.

CHRISTMAS GIVING.

The ever present crochet work and the occasional and pointed comment from the man of the house brings to us a realization that the season of gift giving is near at hand. Even now we are planning on how and with what we shall "pay back." We smile grimly yet with appreciation at the remark of the cynic: "Well, have you become reconciled to your Christmas presents yet?" Already we hear groans over the approach of January-first with its greatly increased accumulation of unpaid bills and that day is coming to be a day of dismay instead of the happy beginning of a new year. And thus the travesty on the true spirit of Christmas season is borne home to us and we are moved to ask ourselves "What is it all about?" and, "What are we going to do about it?" Thoughtful persons must now feel that they owe to their friends a certain obligation in helping to lift the burden of Christmas and of helping to keep for it the true spirit of pleasure giving. We may have tried to find in the holiday practices a justification in "Everybody does it," and either because we have none of us wished to be "different and peculiar" or because we have not had the courage to confront the criticism of the awe--inspiring "they"—we have followed what has seemed after all the line of least resistance, just giving—Oh, anything—just so you give something that cost no less than what we have received.

To be sure none of us feel qualified to direct the tide of popular practices, yet no one of us when we do stop to think, ever so briefly, but has some well defined idea of what we would like Christmas season to mean to us. We do want the Christmas season to be a season of good will, not that the whole year through should be so characterized, but we do, many of us, believe that the special observance of a season of the year may serve to gather up our intentions and forces and that in giving expression to those intentions through the giving of gifts and special greetings there will be given an impetus to the larger display of good will throughout the year. That expression of good will should be not alone a pocket book expression, but it should be of the heart and mind. For it is not the monetary value but the thought and sincere good wishes that give to the gift its pleasure giving power, and it should be remembered that the gift need not necessarily have money value.

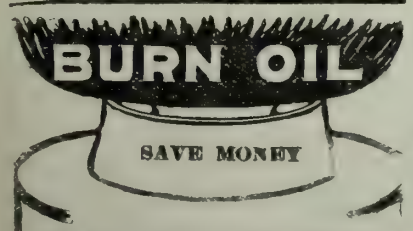
If we then have thought for our friends we will have regard for the appropriate, not heedessly giving to Uncle Tom embroidered slippers when he already is the possessor of several pairs of such impediments, nor on the other hand should we be so desperately determined to give what is practical that we give mother a "Roaster" that she may the better roast the turkey for our Christmas dinner.

The trifling gift finds a ready welcome if it carries with it thoughtfulness and kindness; and if the special greeting carries with it a heart interest in the friend, then does it—then will it truthfully spell "Merry Christmas."—Inga M. K. Allison.

Robert Collyer told the story of an old Methodist blacksmith who was also a local preacher. He went to a Quaker meeting, and by and by he said to his friend, "Let's pray a bit." "No, Sammy," said he, "thee must not pray here." After a while he said again, "Let's sing a bit, then." "No, Sammy, we can't sing in Friends' meeting; and, if we did, we should have to wait till the Spirit moved." "Well, now," said Sammy, "at the Methodist meeting we think we do pretty well if we move the Spirit."

Kind Party: "What are you crying that way for, little boy?" Little Boy: "'Cause it's the only way I know how to cry."—Life's Calendar.

Mother (at the breakfast table): "You always ought to use your napkin, Georgie." Georgie: "I am usin' it, Mother: I've got the dog tied to the leg of the table with it."



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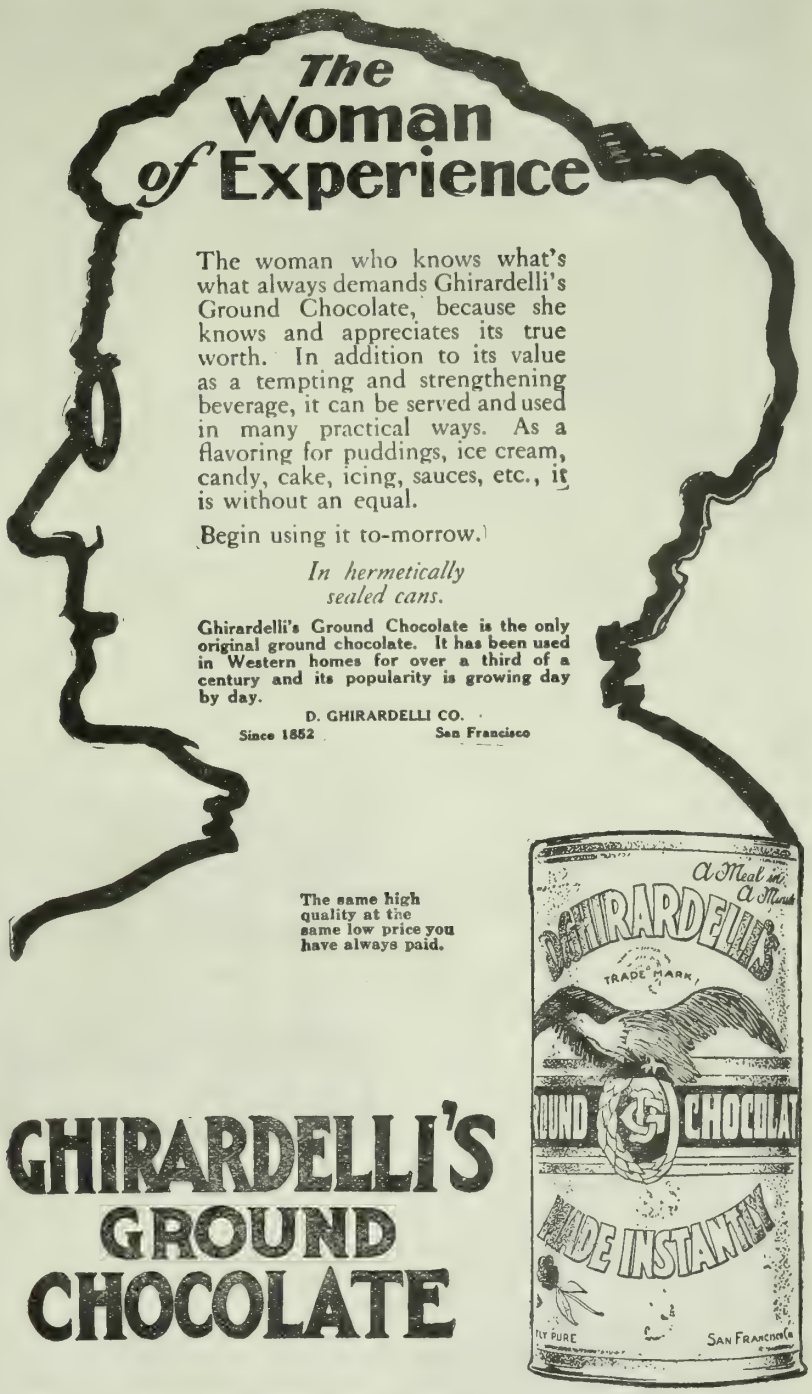

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The Markets.

WHEAT.

A little easier feeling has developed in outside markets, resulting in a curtailment of business locally, and some shading of prices is reported, though there is nothing to indicate that any lower level of values will be established.

Cal. Club, Ctl	$1.95@2.00
Forty-ffold	2.00@2.05
Northern Club	1.95@2.00
Northern Blue'm	2.10@2.15
Northern Red	1.95@2.10

BARLEY.

Brewing & Ship'ng $1.20 @1.25
Choice Feed, per ctl. 1.17½@1.22½

Notwitstanding the large export shipments, offerings in the interior are still heavy, and the buying movement is hardly as active as for some time past. Values, however, are steadily held.

OATS.

There is still quite an active movement in the north, but with rather large offerings there is less strength as to values, and northern white oats are a little easier here. Other lines are steady at he former figures.

Red feed	1.45@1.50
Seed	1.65@1.90
Gray	Nominal
White	1.55@1.60
Black Seed	1.75@2.25

CORN.

California Yellow	Nominal
Eastern Yellow	$1.75@1.80
Egyptian White	1.60@1.70
Milo Maize	1.65@1.70

BEANS.

The crop is now completed, and it is possible to get a little better line on the situation than before. Limas are attracting more attention than other lines, as in spite of an extremely heavy output the crop is moving off rapidly under a strong demand, and prices for eastern shipment have shown a steady advance. Growers, who now hold most of the remaining stock, are holding firmly. In other lines the crop as a whole have been good, and the demand is holding up in very satisfactory shape, keeping values steady at the former level. The crop of Pinks is below expectations, and the crop of large whites was nothing extra.

(On Wharf.)

Bayos: Cal. per ctl.	$4.50@4.75
Blackeyes	3.75@3.85
Cranberry Beans	3.65@3.75
Horse Beans	3.50@3.75
Small Whites	3.90@4.00
Large White	3.75@3.90
Pink	3.00@3.10
Limas	5.15@5.25
Red Kidneys	5.00@5.10
Mexican Red	4.75@5.00

SEEDS.

The general demand is keeping up fairly well for this season, though the greater part of the fall buying has been done.

Alfalfa	16 @17 c
Brown Mustard, per lb	Nominal
Canary	10 @12½c
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c

HAY.

Arrivals have increased again, but most of the increase is accounted for by an export movement. Local supplies, however, still tend to run ahead of the demand, and ordinary offerings are hard to dispose of. Requirements for local delivery and drayage work are lighter than usual, and the present small scope of construction operations also cuts off a large part of the normal demand. This week's rain tends to relieve any fear of a short crop for next year. Alfalfa is still offered in abundance, and moves slowly, though the rain may stiffen the market.

No. 1 Wheat	$9.00@11.00
do No. 2	6.00@ 8.50
Barley	5.00@ 7.50
Tame Oats	6.00@12.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.00
Stock Hay	4.50@ 5.00
Straw, per bale	40@ 45c

FEEDSTUFFS.

It is expected that the rain will curtail the general demand somewhat. Bran is stiffened up a little, with lighter offerings, and oil cake meal has advanced sharply, while cracked corn is easier.

Alfalfa-Molasses Meal, per ton	$19.00@20.00
Alfalfa Meal, per ton.	14.00@15.00
Bran, per ton	26.00@28.00
Oilcake Meal	37.00@38.00
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	40.00@41.00
Middlings	33.00@34.00
Rolled Barley	25.00@26.00
Rolled Oats	32.00@33.00
Rolled Oats	32.00@33.00
Shorts	29.00@30.00

VEGETABLES.

Garden truck has been moving slowly this week, partly on account of weather conditions, which always interfere with city buying somewhat. Supplies in some lines are lighter, but in general values show little firmness. String beans have taken quite a drop, and celery and lettuce from both nearby and southern points are lower. Sprouts are a little higher, and eggplant and cucumbers also command firmer figures. Bell peppers are easier, but chilis show a sharp advance. Offerings of tomatoes are steadily diminishing, and prices show a further advance.

Green Peppers, bell, lugs	30@ 40c
Green Peppers, Chili	50@ 60c
Carorts, per sack	30@ 40c
Tomatoes, lugs	40@ 75c
Beans: Wax, per lb	3@ 7c
String	4@ 7c
Lima	5@ 8c
Cucumbers, lugs	40@ 75c
Eggplant, lb	3@ 6c
Cream Squash, box	30@ 35c
Celery, doz	20@ 25c
do crate	1.00@1.25
Sprouts, lb	4@ 4½c
Lettuce, crate	1.00@1.25

POTATOES AND ONIONS.

Ordinary river stock is quoted a little higher, but on the whole the potato market is in rather poor shape, with a good deal of stock still in the river district, and some northern supplies coming in, while the demand is light. Onions show more activity and an upward tendency, as a good many have been shipped out, and most of what remain are in storage.

Potatoes: Salinas, ctl	$1.40@ 1.50
River Burbanks, ctl	75c@ 1.00
Sweet Potatoes, ctl	1.35@ 1.50
Onions: Yellow, sack	75c@ 90c
Garlic, per lb	10@ 12½c

POULTRY.

Arrivals of chickens were fairly large early in the week, but the demand has picked up in good shape, cleaning up most of the offerings and causing an advance in broilers and fryers. Turkeys also are higher, as the Thanksgiving market picked up well at the close, and with lighter receipts the values are well maintained. Local dealers look for fair values on the Christmas market.

Turkeys, lb	23 @22 c
do, dressed	25 @28 c
Large Broilers	20 @22 c
Small broilers, per lb.	25 @28 c
Fryers	19 @20 c
Hens, extra, per lb	17 @18 c
Hens, extra, per lb	17 @18 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb.	17 @18 c
Squabs, per doz	2.00@3.00
Geese, per pair	2.00@3.00
Ducks, doz	$5.00@9.00

BUTTER.

The market has been gradually dropping all week, with somewhat larger supplies and practicaly no demand for shipment. Extras are back to 30c., and the lower grades have also lost 1c. from last week's figures.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	..	33	31½	31½	30½	30
Prime	..	28	28	28	28	27
Firsts	..	27	27	27	27	26

EGGS.

Both grades took quite a sudden drop after the holiday, and it looks as if the market had passed its highest point, as the tendency all week has been steadily downward, and supplies continue to come in freely.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	..	45½	45	45	45	42½
Sel. Ful.	..	34	33½	33½	32½	32½

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CHEESE.

Offerings have been rather large this week, and all lines are easier. Flats have lost 2 1-2 c. for the week, other lines showing only a slight decline.

Fancy California Flats, per lb. 13 c
New Young American, fancy 15½c
Monterey Cheese .....14 @15 c
Los Angeles dairy prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	35	..	33	33	32	30
Eggs	45	..	45	44	44	43
Cal. Cheese	15½	..	14	14	14	14
Flats	14	..	14½	14½	14½	14½

DECIDUOUS FRUITS.

The deciduous fruit market is getting down to the usual winter condition, both as to offerings and demand. Several lines have about disappeared from the market, the few scattered lots that appear being insufficient to establish values. A few pomegranates have lately been sold at about $1.50 per box. No figs nor raspberries are offered, and strawberries are few and of poor quality, bringing much lower prices. Huckleberries are fairly firm, while cranberries are plentiful and lower. Casabas are easier, though shipments from the principal districts are about cleaned up. Persimmons find a very fair sale. Grapes are in limited supply and bring better prices. Some varieties of apples are being taken from storage, and are accordingly held at higher prices; but with little shipping demand the market is heavily overstocked and prices are unsatisfactory.

Cranberries .....$7.00@7.50
Huckleberries, lb ..... 5@ 8c
Strawberries, chest .....1.50@4.00
Apples, Newtown Pippin.. 50@ 75c
Belleflowers ..... 65@ 75c
Pearmain ..... 50@ 65c
Jonathan ..... 40@ 75c
Crabapples ..... 25@ 50c
Pears, box:
Winter Nellis .....1.25@1.50
No. 2..... 65@ 75c
Persimmons, box .....50@ 80c
Casabas, doz ..... 30@75c
do lugs ..... 50@ 60c
Grapes: crate ..... 65@ 85c
Lugs .....1.00@1.25

DRIED FRUITS.

Values stand about as before, but the trade seems to be livening up, and there is a little firmer feeling all around. The local demand for apples has been largely curtailed, and with a heavy production in the north, prices remain low and weak. Apricots, however, are getting more attention, both here and in the east, and with limited supplies they are steadily held. Peaches, though in no urgent demand, are subject to more inquiry than for some time past, and it is believed that considerable stock has been moved within the last few weks. Many holders believe that there will be a demand later on from Europe, that will take up most of the surplus. The trade is fairly well supplied with figs for the present, but little imported stock is arriving in the east, and more business is expected. Prunes continue firm at the recent advance, and considerable business has been done, leaving very light offerings in the country. The advance has brought on a much better buying movement in the east, where stocks were short. Raisins are moving off steadily at the old prices. The New York Journal of Commerce says:

Evap. Apples, 1914 .... 4@5 c
Apricots, 1914 ..... 6 @9c
Figs: White, 1914..... 4 c
Black .....2½@2¾c
Calimyrna, 1914 .... 5 c
Prunes, 4-size basis, '14. 5¾@6 c
Peaches, new ....c.....3¼@3¾
Pears .....6 @8 c
Raisins (in sweatbox):
Loose Muscatels c.... 4 @4½
Seedless Sultanas .... 5 c

CITRUS FRUITS.

All of last season's Valencia oranges have been shipped and on the eastern auction markets they have been commanding good prices. At New York, Nov. 30th, Valencias averaged from $3.60 to $6 per box. Other auction points showed about the same prices.

Washington navels are now being shipped from Butte and Tulare counties at the rate of over 100 cars daily and a few cars are being shipped from southern California.

Lemons are being shipped in small quanties comparatively, and the auction prices indicate low prices—averaging from $2.20 to $3 per box.

Oranges: Navel, box...$2.00@2.50
Valencias, box..... 2.25@3.25
Tangerines, small box...2.00@2.25
Grapefruit, seedless, box.1.75@2.50
Lemons, box .....1.75@4.00
Lemonettes, box.....1.00@1.75
Limes, case .....3.00@5.00

NUTS.

The principal new development is the arrival of 7,000 bags of Manchurian walnuts, which have found considerable sale at about 11c. The local demand for California walnuts is very light, and many small lots are offered at around 16 1-2c. for fancy stock. The Association, however, reports having shipped practically all its better nuts except jumbos, which are now going out rapidly in small packages. There is more inquiry for almonds, and while nothing can be sold on the Association basis, values show more firmness. A good deal of imported stock in the East has been found defective and condemned.

Almonds, 1915 crop:
Nonpareils ..... 21 c
IXL ..... 20 c
Ne Plus Ultra ..... 19 c
Drakes ..... 16 c
Texas, Prolific ..... 16 c
Walnuts, new crop:
Jumbo, lb ..... 19 c
No. 1 Softshell 16½c
Budded ..... 18 c
No. 2 ..... 12 c

LIVE STOCK.

Cattle remain quite firm at the old level, and the only quotable change is in wethers, which are higher. Dressed mutton and lamb also shows an advance, while dressed hogs are 1-2c. off.

Steers: No. 1..... 7 @ 7¼c
No. 2..... 6¾ @ 7 c
Cows and Heifers: No. 1 6 @ 6¼c
No. 2..... 5½ @ 5¾c
Bulls and Stags.....3 @ 5 c
Calves: Light ..... 9 @ 9½c
Medium ..... 8½ @ 9 c
Heavy ..... 7 @ 8 c
Hogs: Grain-fed:
225 to 300 lbs 7¼c
100 to 225 lbs 7¾c
Prime Wethers ..... 6¼ @ 6½c
Ewes ..... 5 @ 5½c
Milk Lams ..... 6¾ @ 7¼c

Publisher's Department

A considerable of this issue is devoted to poultry in California and we trust the articles will be enjoyed by most of our readers. The poultry industry is already very large on this Coast, but we think it should increase very materially at his time. The shortage of meat should be made good by an increase of eggs and meat from chickens, turkeys, geese, ducks and pigeons. The fact that prices of poultry have not advanced materially during the past decade or more, while beef, mutton and pork have nearly doubled should and will be a great incentive to larger demand for poultry as long as the high prices of other meats are maintained. While the great majority of poultrymen in this State have centered upon the Leghorn type as the best egg machine, we would suggest that the heavier breeds should be raised by the general farmer. A good egg-laying strain of hens are more valuable for the pot if their bodies carry plenty of meat. In the book, "California Poultry Practice," Mrs. Swaysgood discusses the general purpose fowl very fully. She is strong in the opinion that the farmer should raise more poultry and the heavy breeds should predominate.

Our subscription list keeps gaining steadily and at a gratifying rate. During the past week we have added 259 new paid subscribers to our list. Among the lists turned in by our field men was one from our subscription manager, D. L. Schrader, who broke his previous records in securing 66 subscriptions during the week. We now expect one or more of the other field men to beat that number shortly.

Classified Advertisements

Rates 3c per word. No order for less than 25c per week. If you have anything to sell, or want anything, use these columns.

LAND FOR SALE.

VICTORIA, AUSTRALIA, WANTS SETTLERS. Special inducements; government land, railway; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion being arranged. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

FOR SALE—Two 160-acre Sacramento Valley alfalfa and hog ranches, 1½ miles apart, 7 miles from large town located on 3 railroads. Extra well equipped with buildings, fencing, etc. 75 acres in alfalfa. Free canal water. Will exchange one or both for olive, nut or fruit ranch or ranches, or sell on easy terms. Am not a hog man. Write owner. F. L. Darrow, 1605 Telegraph Ave., Oakland, Cal.

FIRST-CLASS STOCK RANGE—3500 acres fine grazing land, scattering oak timber, hilly and very little brush, some flats, fenced and well watered, in well known grass belt west side Sacramento valley. Lots of dry feed, wild oats and burr clover, now available. $8 per acre. Only principals address Stock Ranch, care Pacific Rural Press.

FOR SALE—Good dairy farm, half way between Crows Landing and Newman. Sixty acres, all in alfalfa, forty-cow dairy barn, tank house, six-room house, plenty water, well fenced and divided into six fields. Will sell for $225 per acre. J. V. Alvas, R. 1, Box 40, Crows Landing, Cal.

$8000 IN BEAUTIFUL SARATOGA foothills. Prune ranch, improved property. Woman going East will exchange part value for good bare land. R. F. D., 33 Saratoga.

TO LEASE—100 acres choice fruit and truck land about five miles from Auburn, Placer Co. Tenant on shares; long term wanted. School near. Must have about $1,000 cash. Address Box 96, this office.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg. San Francisco.

FOR RENT—300 acres of alfalfa land on Dixon Ridge abundance of water for irrigation. Apply, J. H. Glide, Dixon, Cal.

MISCELLANEOUS.

CATTLE RANCH FOR SALE—Known as the Robla Lomas Cattle Ranch in Tulare County. Well watered, oak covered hills, 5 miles from railway. Some alfalfa and some farming land, fenced and cross-fenced. 10,129 acres. Price, $10. 10% down and balance on long term at 6%. No exchange. Principals only address D. B. Harris, Minturn, Cal.

REBUILT GAS ENGINES sold for 50 per cent of their new value; cylinders rebored, new pistons and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 304-8 Howard St., San Francisco.

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PATENTS—BOOKS, 100 Mechanical Movements and full information free. Expert services. Best terms. Write today. Fred G. Dieterich & Co., Patent Lawyers, 807 Ouray Bldg., Wash., D. C.

FOR SALE—Several hundred choice Eureka Walnut trees on Northern black root. Sizes from four to ten. Prices reasonable. James F. Gooch, Riviera, Cal.

BUY YOUR APPLES direct from grower. Bellflowers, Newtowns, Langford Seedlings, Missouri Pippins. Prices on request. Edward A. Hall, Watsonville, Cal.

ACETYLENE—50-light Pilot Gas Machine in perfect order. Sell cheap on account of removal. W. Elliot, Redwood City.

ALFALFA SEED—Buy direct from grower. B. F. Towser, Corcoran, Kings county.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 3, San Francisco.

THOROUGHBRED BELGIAN BUCKS and Does for sale. Geo. P. Vawter, Arbuckle, Cal.

TREES AND NURSERY STOCK.

IT WILL PAY you to let me figure with you on large or small plantings of Apples, Pears, Apricots, Prunes, Peaches, Strawberries, Logans, Blacks, Currants, Gooseberries, etc. Send list of requirements. To secure mailing lists, 12 deciduous fruit trees for $2.50—your selection. 100 Strawberries for $1.00. All prepaid. H. A. Hyde, Nurseryman, Watsonville, Cal.

GRAFTED FRANQUETTE WALNUTS—Our nuts bring $100 more per ton than the best Santa Barbara seedlings, and our Royal root grows 50 per cent faster than the average California root. It took us ten years to develop this combination. It is at your immediate disposal. Write us for number you need. Catalogue and price on application. Imperial Walnut Nurseries, R. D. 7, San Jose, Cal.

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WANTED.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write, describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

AN EXPERIENCED FOREMAN farmer desires a position as superintendent or foreman; understands farming, stock, dairying and poultry. Reference given. Rural Press Box (?)

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DAIRYMAN with many years' experience, wishes to run dairy on shares. Alfalfa preferred. Best references. Box 74, Pacific Rural Press.

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WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

BEES AND HONEY.

BEES AND HONEY—Bee-keeping pays big. Price list bees, instruction books free. Samples and prices pure California honey, ten cents. Spencer Apiaries Co., Box 12, Nordhoff, Cal.

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TUSCAN! Ours are the improved Round Tuscans—firmer, more symmetrical and uniform, Finer Grained, less subject to Wind-Fall and Split-pit, and preferred (to the extent of $2 to $5 more a ton) by canners to the oblong Tuscans commonly propagated.

PHILLIPS! We cut our buds from a block of trees that have proven an exceptionally good strain of this variety. Peach trees are always a safe investment—the demand is large, the price firm, and the profit good. What more can you ask?

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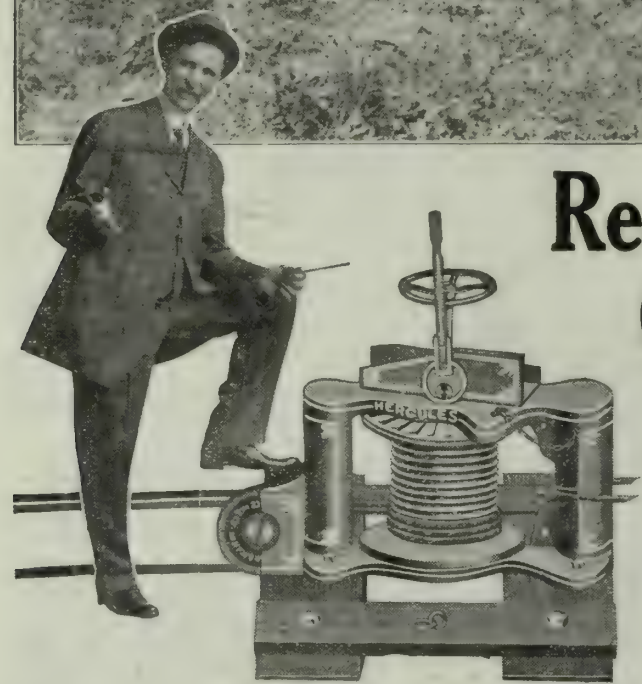

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LET me send you my new, fine, free book at once. I want to show you *proof* of how you can turn each acre of stump land into a double profit the first year, in extra crops and added value of land —by pulling stumps with the Hercules All Steel Triple Power Stump Puller—and how you can make *big Money* in *your spare time* by pulling stumps for *your neighbors* or *by renting* your machine at a *nice fat profit*. My book shows *actual photographs* and prints, *actual letters* from many *owners*, telling of the remarkable feats of the Hercules—how it pulls *any size stump, green tree* or *hedge* in less than five minutes—how it easily pulls *an acre a day*. Read how one man increased his land value from $25.00 an acre to $125.00. Read why the Hercules is the *best investment* you can make now. The

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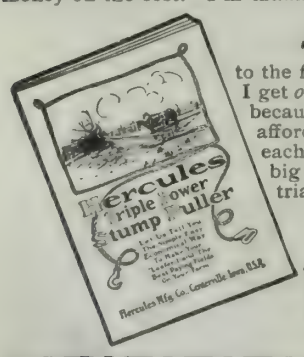

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to the first buyer in 5000 different parts of the country. If I get *one* Hercules in each locality *more will surely follow* because of Hercules quality and efficiency. So I can easily afford to sacrifice my profit on the *first* machine in each locality. Take advantage of this big profit and big saving opportunity *now*. Besides my 30 days' free trial offer and money-saving price I give you a

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Vol. LXXXVIII—24 Forty-Fourth Year

THE PACIFIC RURAL PRESS

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Using Available Fertility.

[Written for PACIFIC RURAL PRESS]

A notable increase in fertility invariably follows all branches of animal husbandry and the healthy growth of the livestock industry in this State is playing no small part toward larger crop yields. Particularly is this true among our dairy farmers, whose stock are generally cared for in such a manner that a large portion of the manure accumulates in corrals and around the buildings, thus making a two-fold reason for proper disposal, viz., the fertility that it contains and for sanitary reasons.

Although many have recognized the need for proper disposal and conservation of such manure on account of its value to their land, the primary object of most disposal systems has come with the desire to promote cleanliness around the stables.

To be of value from a sanitary as well as a fertility point of view, any system of manure disposal should allow of economical maintenance, suitable protection of the manure from the weather, and for the proper drainage of all liquid matter.

It was with the hope of incorporating all of these requirements in one system that the Melone Ranch Company, owners of the Oak Knoll Ranch in Napa county, decided to build a concrete manure pit two years ago, because they wanted all of the fertility in every ton of manure as a stimulus to their orchard and other lands, and their milk trade demanded that all barns and corrals should be free from contamination with the liquid and solid manures.

Fertility Follows Livestock.

To accomplish this it was necessary to have the pit so erected that all the manure, both liquid and solid, from a 70-cow dairy, together with that from 15 to 20 horses, could be stored till fall, thereby enabling them to distribute it on the orchards at the most advantageous time before the winter rains.

The pit, as constructed, is located several hundred feet from the dairy and horse barns, being connected with an overhead track system, supported with eight by eight posts, set in cement, and projecting ten feet above the ground. This track system is connected up with branch tracks leading into the barns, so that the carriers may be loaded from the stalls and shoved directly out to the pit. This carrier system also serves as a feed conveyance in both the dairy and horse barns, tracks for that purpose running in front of the mangers.

The pit itself is made of concrete, having a floor fifty feet long and twenty feet wide, with a slope from each end to the center of three inches. Mr. Melone thinks that a narrower pit would be better as it would be easier to load from. He suggests 16 or 18 feet as being a better width. Directly in the center and extending from wall to wall across the pit and for about two feet outside of the pit on one side, is a secondary pit three feet deep and two and a half feet wide. This smaller pit is covered with two by eight boards, set cross ways of the opening, thus keeping out all solid matter and at the same time allowing of perfect drainage from the main floor.

The side walls are made of concrete, eight inches thick and four feet high. The walls act as a foundation for the gable roof, which is supported with four by fours set on an eight-inch plate and six feet high.

The height of the ridge boards from the rafters is six feet, the carrier track running the entire length of the roof at the apex of the gable. A narrow board walk laid on top of the rafters and underneath the track allows sufficient room for a workman to push and dump the carrier into the pit below. An overhead platform, laid on the rafters, also furnishes storage room for gypsum. By this means the carriers are pushed from either of the barns, on to the overhead track, through the end of the gable and dumped over the manure in the pit, much the same as a barn is filled with hay. Steps at the end of the pit from the ground to the rafters afford access for the workman in handling the carriers.

Each day after the manure has been dumped into the pits two shovelfuls of gypsum are scattered over the pile, thus preventing the fly nuisance and at the same time preventing the escape of a large amount of ammonia from the manure, a thing which Mr. Melone attaches much importance to.

The pit and roof alone, however, would not be sufficient insurance against loss, as manure carelessly dumped into sheds prevents leaching, but not hot fermentation with its consequent loss of nitrogen.

As preventives for overheating two factors have proved important, viz., the mixing of the manure from the horse barns with that from the cow barns and the keeping of the pile moist with the liquid manure from the cow stable.

In accomplishing this the liquids are run from the stable in a concrete-lined ditch, 10 inches wide and four inches deep. This is much better than a tile drain would be as it can be easily cleaned with a shovel, and when covered with a twelve-inch plank does not admit of foul odors escaping. This ditch dumps into the outside extension of the liquid pit from where it is pumped with an electrically driven centrifugal pump through a one-inch pipe and distributed over the pile of solids. The distributing is performed by a perforated pipe hung from the rafters over the entire pit, the pump forcing the liquid matter out through the perforations in a fine spray.

Sufficient liquid is distributed to fill all air spaces, although care is taken not to use enough to leach the pile. By using chopped straw for bedding in the barn instead of coarse matter, the absorbing capacity of the manure is much greater, and when the pit is cleaned the solids are so tightly packed that a pick often has to be used in digging them out. During the fall months of each year the

(Continued on page 605.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

Address all communications and make checks or money orders payable to
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Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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W. H. Schrader - - Advertising Manager
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R. E. Hodges } - - - Assistant Editors
J. C. Loomis }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the Bureau, at San Francisco, for the week ending at 5 United States Department of Agriculture Weather p. m., December 9, 1914.

Stations.	Rainfall Data			Temperature Data Past Week	
	Past Week	Seasonal to Date	Normal to Date	Max'm	Min'm
Eureka....	3.80	12.08	11.51	56o	40o
Red Bluff...	2.67	4.90	6.64	50	36
Sacramento.	.72	2.06	4.44	54	32
S. Francisco.	1.42	2.48	4.97	58	42
San Jose....	.96	2.86	3.81	60	34
Fresno.....	.23	.97	2.36	58	34
Indep'nd'nce	.00	.40	2.28	50	16
S. L. Obispo.	.13	2.27	3.96	60	36
Los Angeles.	.06	1.31	2.77	64	44
San Diego..	.15	2.59	1.61	64	46

The Week.

It has been a fairly juicy storm: field work has been taken up actively almost everywhere, and before Christmas a lot of land will be turned and seeded, or prepared for later plantings of all kinds. The rainfall is behind the normal to date, but the normal includes generally a lot of water which dribbled down during the early autumn and flew away again at once. This year it is all here and available for work, wherever sufficient depth of penetration is attained, and it cannot get away during these short days of slanting sunshine and moist winds. Everything is going well for a good area of wheat and barley, and we hope a relatively larger amount of the former, for the world just now seems to call for more bread and less beer—although, of course, it can bread the barley also if it has to. Probably rye will be very acceptable; in fact, everything eatable and transportable will be loudly called for The fact is that Russia has so much to do with the Turks in the Black Sea district, and so much need to eat her own grain also, that she will have to do less in feeding even the peaceful countries of Europe. Italy is getting all she can of the new crop now ready in Argentina, and no doubt other peaceful countries are also hunting grain, to say nothing of the belligerents in that line. The Pacific Coast, by the Panama canal, is also in the quick delivery business, and if California does not get her share of the trade it will be because she is too slow to produce the goods. If the plains people will wake up to dry farming grains as the lowlanders are to rice, it will mean many new millions to California.

Water Versus Rail.

Speaking of rice reminds us that a movement of a quarter of a million dollars' worth of rice had passed down the Sacramento previous to last week, and that suggests that the real issue between water and rail transportation, not only inland but over-sea, is sharply arising. The current news is that a railroad problem now bothering more than one transcontinental line is how to meet the increasing competition of steamship lines using the Panama canal, on eastbound and westbound business. Julius Kruttschnitt, chairman of the Southern Pacific board, is now on his way to the coast, making en route an inspection of the road and of business conditions in the territory it serves. William Sproule, president of the company, will join Mr. Kruttschnitt in his studies. Since the canal opened there has been a steamship load of California goods leaving San Francisco every two or three days. Every steamship that has departed has been loaded to capacity with goods, that hitherto, in large measure, have gone to the railroads. The values of the cargoes in November are said to have totaled five millions. "Most of the 250 per cent increase in water-route business that the San Francisco Chamber of Commerce reported for October came out of the railroads," remarked a railroad man when apprised of Kruttschnitt's coming. "It is a condition which the railroads will have to meet in constantly increasing measure."

Twenty years ago this thrust in the side of the railroads would have caused many Californians to chuckle, for the railroads were then imperious and almost profane in their attitude toward the public. But since then it has been very different. The railways have found that though their heart was of steel it really had some human temperature in it, both for the individual producer and for the welfare of the state, and the present sincere wish of California will be that Messrs. Kruttschnitt and Sproule will find ways in which they can meet the present issues with profit and prosperity to all concerned.

Who Pays the Freight?

We have a lot of respect for the economic sage of the Chronicle, but we cannot always see clearly through his spectacles. For instance, speaking of the reduced cost of freighting fruit to the East by water, he says: "The American-Hawaiian steamers now offer a rate of 55 cents a hundred pounds, or $11 a ton, on apples from Pacific Coast points to New York. That is said to be a saving of about $6 a ton over present transcontinental rates from northern points. It is evident that a reduction of about a third of a cent a pound on apples will not have the slightest effect on the price paid by consumers, except as increase of total receipts at distributing points may create keener competition. But a saving of $6 a ton means $78 on a carload of thirteen tons, or $1560 on a trainload of twenty cars, which is not unusual. That is a saving which will be absorbed by the succession of dealers which handle the fruit, who will get it all before the consumer sees it."

That is, perhaps, all true, although we must believe that reducing cost of delivery on anything must ultimately influence the retail price. If that is not true then we have to doubt the dictate of the economists that economics finally settle everything. But never mind that: suppose the consumer does not get any cheaper fruit, is that all there is of it? By no means. In the fruit trade the shipper has always to pay the freight in advance. Will that be different by water? If not, then the shipper (for the most part the grower or his association) has to pay the freight at the point of lading, and can the Chronicle contend that paying $6 per ton less, after he has already paid all the costs of growing, picking, packing, paper, boxes, etc., means nothing to him? If the shipper has to dig up $78 more for a car or $1560 more for a train before the stuff will move, does not that matter? Does not throwing in more good money in the pursuit of money hoped for, increase the risk, limit the trade, and work a hardship? It occurs to us that for about forty years the fruit-growers have been fools to waste so much effort trying to get fairer freight rates, if after all the consumer would pay it, whatever it might be. We hope Mr. Kruttschnitt will find something better in his investigation than our old friend's philosophy.

East and West.

And there is another thing about this east and west, and the going between the two, which other people in the railroad way are looking into and getting comfort out of. Vice-President Brown of the Western Pacific and his traffic managers have been out looking around. Some one caught Mr. Brown the other day and made him talk this way: "Business is good, and when I say it is good I mean it, notwithstanding contrary reports. We may not feel the highest effect of good times just now, but it is in the air, and will blow our way in the very near future. There is no way of it being stopped. California is being better advertised than any other one spot in the United States has ever been or may ever hope to be. The railroads are taking the lead in this advertising campaign and next year is going to be the big year of the Pacific Coast. Big things are going to be done and the benefits will be distributed to every class and location."

It does look as though we should have an immense increase in the capacity of our home markets, and this will surely help all who cater to them. And then, speaking of the East and West, there is this contrast which did not occur to Mr. Brown. Some of our county tax-collectors, who know better than any other people who have money on the last Monday in November, are reporting that there seems to have been even less trouble than usual in paying taxes. Compare that with New York, whence it was telegraphed last week that more than 100 pickpockets, unable to make a living by following their vocation, have, during the past two months, sought work, according to records made public today by the Department of Correction. "Old-time pickpockets tell us," said Deputy Commissioner Lewis, "that by rifling fifty or sixty pockets a day they can make only $15 or so a week. They used to be able to retire for a month after picking half a dozen pockets." And now they have to go to work to get money to pay their way to California, where business in their line will doubtless be very brisk next year. It looks like a desecration of art, surely.

Rural Credits and the Reserve Banks.

A dispatch came from Washington at the close of last week the political bearings of which we may be able to help our readers to understand. This was the dispatch: "The United States Rural Credits Commission today abandoned plans for an independent rural credit system and appointed a sub-committee to draft an amendment to its bill, making the system subordinate to the Federal Reserve system. This action removes the principal differences between the various advocates of rural credits legislation."

We imagine the announcement would be a little more correct if it should have said that the action removes the principal differences between the various advocates who belong to the congressional majority and to the administration. For that is really what has happened. Note first: the "United States Commission" is not the "American Commission" in which California has representation; second, the United States Commission was appointed by President Wilson and consists largely of his political associates; third, this United States Commission did father a particular bill which provided for special rural credit machinery, and now, for political harmony, it chooses to operate under the new Reserve Bank machinery, which is also a product of the present administration. We are not at this moment saying that this is either wrong or undesirable; we simply wish our readers to discern the actual environment of the proposition.

It should be added that this flight to the arms of the Reserve Banks does not solidify the movement for rural credits in Congress, though it may operate that way if the Congressional majority should base its action upon it. There are some in Congress who are urging the government to do vastly more than the Reserve Banks can do and there are influential agricultural organizations supporting that view. And so the telegram we quote above does not settle the question, but it does apparently determine the home-rule policy of th administrative majority. Other aspects of the matter will be disclosed when Congress tackles the proposition formally.

A Silly Proposition.

And now some people are talking about the division of California into two states because of incompatibility of temperament between the two sections thereof. Division projects were based upon differences in climate until it was found that there are not any particular differences and now the claim for subdivision seems to be on even thinner grounds, viz.: the difference between the sections on the matter of prohibition. We do not know from which side of the question this division proposition emanates, and we cannot see of what permanent advantage it can be to either. Surely no serious, patriotic person could for a moment think of sacrificing the effective unity and leadership of California as a state either for the presence or absence of gin. That matter will be settled in a rational way without divorce, just as many other important internal differences are settled. But it is a waste of time to argue for or against division, just as it always has been. In the whole history of the United States there has been only one State division, and that was in Virginia as a war measure. The Carolinas and Dakotas were never divided: they came in in two units in both cases and yet they are sometimes cited as friendly divisions. It is idle also to talk of amending the Constitution of the United States to make division possible. Amending the Constitution of the United States is an elaborate and laborious process, and if we were asinine enough to ask it our request would be laughed to scorn. But there is another and more insurmountable obstacle in the way—providing all others could be disposed of—and that is the fact that the country will not tolerate any increase of the disproportionate representation in the United States Senate between the East and the West as measured by population of the respective sections. A Senator from New York represents five millions of people; from Pennsylvania, about four millions; from Illinois, nearly three millions, etc. A Senator from California represents less than one and a half millions; from Oregon, three hundred thousand; from Arizona, about one hundred thousand; from Nevada, forty thousand, etc. If there is anything impossible in national legislation it is the subdivision of a western state. And it ought to be impossible.

Queries and Replies

Querists must give name and address.

Replanting Fruit Trees.

To the Editor: Is it good policy to replant prunes in on old prune orchard which is dying out? The soil is sandy loam. Could apricots be planted on this same land?—W. D., Aptos.

Of course, you ought to decide as well as you can why the old trees are dying. Trees in good soil and well taken care of do not die of old age very often in this State. If you propose to change conditions in some way so that the cause of the death of the old trees will be ruled out, you can replant the ground with the same fruit, if you wish. There is no advantage demonstrated yet of rotation of fruits. Their requirements are too much alike to allow the soil to get advantage from a change. On sandy loam, if deep and well-drained, your prunes ought to be on peach or almond root, probably. Apricots will thrive on the same soil, if on peach, or their own seedling roots.

Will Pigs Pull Oranges?

To the Editor: I am thinking of keeping two or three pigs on my orange grove. Do you know if pigs would bother the oranges and eat them from the lower branches?—A. B. H., Covina.

We have to invoke the referendum on this question. We never saw a quadrupedal pig in an orange orchard, but we have seen pigs of the tourist variety pulling oranges from considerable distances above the ground. If a pig is like a man, the acridity of the skin would deter him from much indulgence in unskinned oranges, but we do not know from actual observation whether a pig is like a man or not: the resemblance is generally the other way around.

If you do know that pigs will eat oranges, and you propose to keep them to clean up the culls, then you may be pretty sure they will pull fruit for themselves. If you are thinking of keeping a few pigs to consume house-wastes, etc., we would advise that they be kept in a clean pen, as Paddy keeps his, and not give them the orange land for exercise. Keep the hose handy and wash the pig and pen frequently. Pigs are not good orchard ornaments. But who can answer the question?

Grove or Orchard?

To the Editor: I have bought a nice little orange property, trees well grown and thrifty, and I wish to know whether to call it a "grove," an "orchard," or what?—Owner, San Francisco.

Our chief objection to the term "grove" is that it means trees but little removed from a wild state. The dictionary says of "grove": "a group of trees smaller than a forest; a small wood especially when cleared of underbrush, etc." It evidently does not include the idea of culture, which is conspicuously characteristic of California orange properties. If we are not mistaken, the word grove entered American horticultural literature by way of Florida, and the early investments there were in trees run wild from early Spanish introduction of the species and brought to production of better fruit by top-grafting some of the trees and clearing out the thickets in which they were found growing. In this way the word "grove" was quite justified in its application to early orange properties in Florida. But Florida has grown far away from such policies and California never had them, and therefore the word "grove" and its associations from prehistoric times, signifying trees under a minimum of culture, is not at all representative of citrus or other tree-fruit property and policy, anywhere in the United States, at least. And we say this in spite of the fact that the dictionary says: "a collection of orange trees is usually called a grove." Unless we propose to cut loose from all the historic and traditional associations of the word "grove" in Scripture, poetry, etc., this should not be true.

The term "orchard" is better because that is defined as : "a collection of trees cultivated for their fruit or other product." This recognizes the culture element, which is the distinguishing essential between the ancient and modern policy with fruit-bearing trees in this country.

In Europe from the most ancient times fruits have been a factor in horticulture—which is gardening. Our fruit growing, considering the intensive character of it, involving the highest handling of the soil in tillage, fertilizing irrigating, etc., and the constant training of the trees for convenence, thrift and production of most acceptable characters and qualities of fruit, is really gardening policy expanded to large acreages and great commercial values. But the term "gardening" is by long use so restricted in area, and is so closely associated with the growth of vegetables, flowers, etc., in connection with fruits, that its application to special fruit industries seems unwise—although it has contributed so much of its philosophy and methods to the operation of those industries. Therefore, we forsake the term "fruit-gardens of California," pretty and significant as it would be, because it would also bring into consideration other phases of fruit-gardening abroad, viz.: high walls for protection against thieves and weather, elaborate trellises for training, dwarfing, etc.—all of which are abandoned in California. On the whole it seems to us that the word "orchard" should apply to all our collections of tree-fruits, which are handled by intensive methods. And, by the way, it is this intensification of tree-frut culture which constitutes Calfornia's chief gift to the pomology of the world.

Sebastopol Gravensteins at Home.

[Written for PACIFIC RURAL PRESS]

A district in which many varieties of apples grow equally well, but where the Gravenstein is supreme because there is no particular competition from the rest of the world, is the Sebastopol-Forestville hill section of Sonoma county. The lack of competition is due to quality, beauty, and earliness. The trees bear good-paying crops at ten years. The output now is about 200 cars a year and rapidly increasing.

Light sandy loam with clay two to four feet below the surface; about 35 inches of rain per year and no damaging frosts; foggy mornings and bright afternoons in summer; no irrigation needed; and a home-owning rural population, whose wide-awakeness is indicated by the demand which nurserymen are feeling, that scions be taken only from trees which are known heavy bearers—all combine with the lovely hill landscape to make the wanderer yearn to stay among the Gravensteins.

The roomy veranda-surrounded bungalow amid apple trees and scenery where W. I. Newcomb has lived and enjoyed living for six years, is typical of the section.

Many of the apple trees were already bearing when he took the place; some have been trained from infancy in the way his experience shows they should grow. Some of the trees in this district are 60 years old with prospects of attaining a ripe old age.

Going by the good general rule that in selecting the variety to grow one should consider not only the adaptability of that variety to the natural conditions, but also to the artificial conditions which determine marketing facilities, Mr. Newcomb plants only Gravensteins. All scions and buds used for the past two years have come from trees he knew were good bearers. Hardy seedlings from Kansas are used almost entirely in this section, being budded or grafted here.

The budded trees are less subject to crown gall because the wounds heal more quickly and are not so long open to attacks by the bacteria. They are more crooked; but outgrow this.

In planting the trees, top soil from a good sized hole is kept separate, especially if subsoil comes up; the roots are not much trimmed except to remove broken and extremely long ones, the cut surface being on the underside of the root to press downward to the moistest soil. Sometimes a bunch of small feeder roots spring out around the cut, sometimes two or three long roots come; there seems to be no way to tell which kind will grow. The moist top soil is tamped in first around the roots, setting the tree a trifle deeper than it was in the nursery, and leaning it slightly toward the prevailing wind which here comes from the southwest. This work is done in winter or spring as convenient. Mr. Newcomb had just finished setting 120 trees on April 6, last.

To keep the head low down, the tree is cut off about two feet tall, leaving the bud next below the cut on the lee side of the tree, this being northeast at Sebastopol. This top bud grows most nearly straight up. Others will sprout lower down, of which two or three will be left at equal intervals around the tree and perhaps some inches apart up and down. These lower branches do not grow so nearly straight up—they overbalance the tree toward the prevailing wind so that its effect will tend to balance the branches of the whole tree over the trunk.

Low heading is considered very necessary here where people make their living from the trees, and cannot afford to use long ladders or towers and extra time in pruning, spraying, and fruit picking. Likewise there is less trunk on young trees to protect from sunburn and borers, and less trunk on older trees to need the shade of the foliage. However, sunburn seldom injures the trees seriously in this locality, but last year some were injured close to the ground.

The adult beetles of the flat-head apple-borer like to lay their eggs in this sunburned bark, so the larvae may feed on the dead wood under it. Sunburned young trees are usually replaced, but some last year were scraped off, the borers killed, and the wound covered with grafting wax.

Wood is allowed to grow quite thickly in the center of the older trees, not rubbing, however. Fruit spurs can be induced to set in the body of the tree rather than far out on the limbs where a heavy load would be dangerous to the tree and fruit too. Some spurs on Mr. Newcomb's older trees have borne half a dozen crops each, and will continue. One old tree with an 8-limb head has borne five big crops in six years and will have another big one this season. While trees are young, their new growth is cut back one-half to two-thirds. Many of the older ones are not topped at all to speak of.

"As long as you cut the ends off from branches, they will grow more new wood; if you leave them alone, their tendency is more to very slow growth and heavier fruiting down on the old wood. When thinning is necessary, cut off the entire branch." Too much old wood was saved last winter for the heavy blooming of the spring and the fruit had to be thinned some. "Never leave two apples in a bunch. Too much chance for coddling moth where they rest against each other, and they grow larger alone."

Bur clover grows throughout the orchard; 23 loads of farm manure were spread on two acres in the spring; commercial organic fertilizer is used, but chemical fertilizer is frowned upon.

The bur clover is plowed under about the first of March and the soil is harrowed after every rain to save moisture. Some growers let the clover grow longer; and it was a good stroke this season. In ordinary years the ground would be too dry for late plowing.

Lime-sulphur sprayed late in February controls San Jose scale, but the green aphids are a more serious problem. Being sucking insects, poison sprays don't worry them, and the effect of a colony of them on a leaf is to curl it close over them and keep out the contact sprays that might get them by closing their breathing pores. The only way to control them is to cut out and burn all the curled leaves, and spray with contact insecticides for those on leaves not already curled. Wooly aphis also does more damage than is suspected by most orchardists and even Northern Spy roots seem resistant only to a certain extent. Powdery mildew and aphids were treated about March 7 with a spray of atomic sulphur, distillate, whale oil soap, and caustic soda. Leaves at that time were just opening. Another spray was applied for aphis in the middle of March.

On April 7, Mr. Newcomb applied a lead arsenate spray mixed with atomic sulphur for the mildew and codling moth and this was repeated ten days later. The Gravensteins were blooming unevenly at the first codling moth spray so that only a few calyx cups could be filled with poison. The second arsenate spray caught the late blossoms and the young apples from the earlier ones. The Gravensteins received no more spray this season—they were marketed before the second brood came. The later varieties were not sprayed till August.

Gravensteins are picked in July and August. Three or even five pickings are necessary to get those that are prime at any given time. A metal bucket hangs on the limbs by a heavy hook and pickers use both hands, being careful not to squeeze the fruit with their fingers.

A bruise disqualifies the apple from the No. 1 pack, but cannot always be detected; and if shipped as No. 1, it hurts the future sale of his Gravensteins.

All are taken to the packing house of the Sebastopol Apple Growers' Union in lug boxes as soon as a load is picked. Professional graders and packers there put them into two grades for quality; and three sizes. Number 1 apples must have no scab and may have only one outside scar of codling moth, but must not have been entered by the worm. The second grade must be nearly perfect apples, and if any grower delivers more than 10 per cent lower than second grade at the packing house, he must pay for the sorting. Each apple is wrapped in an association label and each box is labeled, as an advertisement of Sebastopol apples.

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Good Citrus Market Outlook

[Written for PACIFIC RURAL PRESS
By J. E. Adamson, Pomona, Cal.]

With the opening of the shipping season for citrus fruits, there is the usual speculation as to the success of the season from the standpoint of net returns to the grower.

There is no method by which the selling of fruit products can be forecasted with any degree of accuracy, but certain controlling factors can be considered and some reasonable estimate made.

The crop of navels would seem to be considerably under that of last year, most growers placing the proportion at about three-fourths or less. In some districts the seeming shortage will be largely offset by large sizes, while in others the estimate will be cut down by extreme small sizes. The latter condition is due largely to lack of moisture in the late summer months, or by the devitalizing effect of the black scale which was very abundant this year.

Most districts have shown a serious percentage of split navels, some estimates running as high as 10 per cent, but this is probably higher than the actual conditions would justify. The split oranges are all on the outside of the trees and look more than is really the case. There is always a considerable percentage of splits, the main difference this year being in the fact that the split is very large and shows up to the eye.

The appearance of the fruit this year is a big improvement over most previous years. The surface of the rind is smooth and of very fine texture, even in the lower valleys where there is usually a good deal of roughness. The color has not advanced yet to the stage where it can be told whether it will be of the desirable deep orange, but all conditions point to a season of good fruit.

The requirements of the U. S. Pure Food Commission that fruit must have 8 parts soluble solids to one of citric acid, before it can be considered mature, has caused a considerable delay in the shipping of the early fruit, which should have a good effect on the later sales. There would seem to be no doubt that the shipping of sour and otherwise immature fruit is bound to have a bad effect on the buying public by spoiling the appetite for citrus fruit for some time.

The presence of a large apple crop will be a big factor in the sale of our fruit this season, and the growers will have to use discretion and send only the best to the markets, and that only in quantities that can be absorbed readily. The public must have a constant supply even though the market may be low because habit is a large factor in the consumption of any product. The markets must be kept supplied at all times without an overloading which will cause the dealer to buy only day by day, hoping for a downward move in the price.

The Valencia crop is too far from maturity to offer any good basis for an estimate, but the sizes seem to be good for this time of year, in fact much better than last year. The crop would seem to be smaller than last year, but an estimate at this time is pure guess work.

The lemon crop shows a considerable increase over last year, which was to be expected, as the trees are coming back to condition after the damage by the freeze of two years ago. The fact that trees can come back after such an experience, in the short space of two years, should be a matter of considerable satisfaction to the growers, especially as they are equipped to prevent any such serious damage as came that year.

Just now the trade is very particular as to sizes in lemons, the demand being for a 300 size. There is even a tendency to discount the 360 size, which has usually been a popular size.

This means picking to a 2 5/16 inch ring, where the lemons are green to allow for the natural shrinkage due to curing.

Some growers are loath to pick to so large a size on account of the extra expense of picking, but the difference in the prices will more than offset the increased cost, and more pounds of fruit will be picked from the trees.

What effect the war will have on the citrus fruit market, is problematical. The tightening of the money of the buying public will be the main factor, and only time will tell how far that will affect us. Canada has been a large consumer of our fruits, and Canada is not in the condition it has been in some past years, due to the influence of the war. At the same time Canada is a large producer of food stuffs which will be favorably affected by the war, and possibly our neighbor to the north will be in better shape for the consumption of its share of our fruits than would seem to be the case at the present time.

The lemons from Sicily can still come into competition with us, being limited only by the shortage of shipping facilities, so the California grower must look for his market without any idea that he will have it all to himself. Careful handling and packing of our crop is the watchword of the hour this season as well as last and will be to an increasing extent in the future.

BLACKBERRY PRUNING.

[Written for PACIFIC RURAL PRESS]

Blackberry pruning is now proceeding in the Sonoma county district. All canes are cut out at the base except four of the most thrifty ones. A stake four or five feet tall is set beside each hill of the Lawtons. To this the canes are tied. George Boyd and many others use two stakes per hill set so that two canes can be tied to each. This spreads out the hill to give best access of sun and air to the berries and enables pickers to work much faster.

The Federal Bureau of Chemistry intimates through the Citrus Protective League that its present definition of mature oranges, (8 parts soluble solids to 1 citric acid) made under stress of a demand for such definition, but based on short study, is too lenient, and will probably be changed on sufficient investigation, to a still smaller proportion of acid.

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Effects of Citrus Stocks.

[From an address by Prof. W. W. Bonus, at Fruit Growers' Convention.]

A short time ago members of the Citrus Experiment Station staff visited a nursery in Southern California where sweet and sour orange stock was being grown. An examination of about one thousand trees of the sweet stock showed 29 per cent by actual count affected to some extent with gum disease. Not one case of gum disease was found among the sour stock in a similar examination.

Last spring we planted many thousand seeds of sweet orange, sour orange, trifoliate orange, pomelo, and rough lemon to grow stock for a more extensive stock experiment on the proposed new Station site. Shortly after the time of planting and until the seedlings were attaining their first growth, the seed bed was attacked by a soil fungus, Rhizoctonia. As a result of this fungus invasion, we lost about 70 per cent of the sweet seedlings, 60 per cent of the trifoliate, 40 per cent of the sour, 30 per cent of the pomelo, and probably 1 or 2 per cent of the rough lemon.

Prof. Fawcett has shown beyond any reasonable doubt that sour stock when directly inoculated with certain fungi by artificial means has an inherent constitutional resistance to the spread of the disease, when compared with the severity of the attack which sweet stock experiences under similar conditions.

Now resistance to disease is only one of several factors that enter into the question of the stock to use in propagating citrus fruits. We have dwelt upon this because it shows in a striking manner the differences in behavior to be expected of various stocks. But this is only one aspect of the problem. The question of resistance to drouth, hardiness in respect to cold and to unfavorable soil and water conditions, are also of prime importance. In addition there should be determined the type of soil best adapted for the root development of the respective stocks.

In considering root stocks, the development also of the variety grown upon them for commercial purposes must be considered. What will be the effect of the stock upon (1) the size and vigor of the trees produced, (2) the age in which they come into bearing, (3) the yield, and (4) their period of maximum efficiency? Again, will there be any differences in respect to the points just mentioned when the same variety is budded to the same stock in a different soil type?

The results which we submit today are two-fold in nature. They indicate the productiveness of the trees on the respective stocks to date and their vigor as indicated by size. The production is given for an average of five years for the navels and Valencias, and three years for the Eureka lemon.

In Plot A, of 49 trees set out in April, 1907, on light, deep, uniform granite loam, the navel yield on sweet is considerably larger than on trifoliate. For Valencia, sweet ranks first, with pomelo and trifoliate a close second and third, respectively. Sour has been the least productive. For Eureka lemon, pomelo has given the greatest yield, sour second, trifoliate almost as good as sour, and sweet is last.

In Plot B, "deep" clayey loam underlaid by pervious sandy loam, navel on sour is first, trifoliate not far behind, and sweet a close third. On the other hand, Valencia on trifoliate leads in this plot by a considerable margin, producing almost twice as much fruit as sweet, about one-third more than the variety on sour or pomelo. For the lemons, sour leads, with sweet and trifoliate tied for second place, and pomelo last.

In Plot B "Shallow," clayey loam underlaid at 15 to 38 inches by decided hardpan, the yields are naturally much reduced. Sweet stock again holds first place for navel, sour second, and trifoliate third, with but little difference between the last two. Valencia in this case has done best on sour, almost as well on sweet and trifoliate has given better yields than pomelo, which is last. Eureka lemon on trifoliate ranks first, sweet second, sour third, and pomelo fourth.

So much for fruit production. Let us consider briefly the comparative vigor of the trees as indicated by their size. The most uniform method of determining this seemed to be with the fumigation tent, by which was obtained the volume of the tree in cubic feet.

In Plot A, navel on trifoliate is about 30 per cent smaller than the variety on sweet. In the case of Valencia, the average size of the trees on sweet and pomelo is practically equal, and trifoliate exceeds sour by a small margin. Eureka lemon on sweet is somewhat larger than on pomelo, sour ranks third, being almost 200 cubic feet smaller, and the trifoliate root has dwarfed the tree tremendously.

In Plot B, Deep, there is very little difference in the size of the three stocks on which navel is budded. In the case of Valencia, it is interesting to note that the size of trees on sweet and trifoliate are for practical purposes equal; while trees on sour are the smallest of all. In Eureka lemon, we again see the characteristic, marked dwarfing of the trees on trifoliate. Those on sweet stock are again the largest, but in this case sour ranks third, and pomelo second.

In Plot B, Shallow, navel on sweet and sour run very nearly equal, with trifoliate third. For Valencia, the order of size is sweet, pomelo, sour and trifoliate, and for Eureka lemons, sweet, sour, pomelo, and trifoliate.

One of the most striking facts of this experiment is the very decided increase of the stock above the ground wherever trifoliate root has been used. The result of growing a large tree upon a root system which is naturally small, like the trifoliate, and which in its normal conditions is not accustomed to developing a large tree, seems to result in a stimulus which increases the size of the stock markedly.

This account is intended to be a progress report pure and simple. Definite conclusions at this stage of the work would be unwarranted and unsafe. We must remember that these results represent only the first half of the the first decade of this experiment. The trees have only begun to indicate what they may produce in the future. The points to which we call attention, however, are, that the reputation of the trifoliate stock for dwarfing the tree does not hold good for all soils or all varieties. We have seen here Valencias on trifoliate, producing as well and growing a tree as large as, or larger, than those on other stocks. Also, we may note that the behavior of the same stock and variety varies on the light and the heavy soils. One thing seems unmistakable, and that is that trifoliate root dwarfs the lemon to a very great and undesirable degree.

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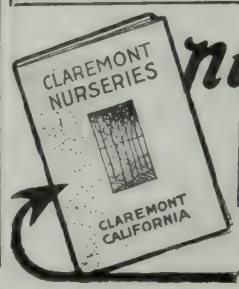

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The Kind of Walnuts to Grow.

[From an Address by W. W. Fitzgerald at Fruit Growers' Convention.]

[Not only adaptability of a variety to local conditions should be considered before deciding which variety to order for planting, but also the demand its product will meet on the market.—Editor.]

A fancy variety of walnuts producing only 50 to 75 pounds on full bearing trees at 25 cents per pound, would not compare favorably with a variety which produces 200 to 300 pounds at 12 to 15 cents per pound. The relation between the quality of nuts and the quantity of nuts produced should be carefully considered in choosing a variety for planting, especially as the demand is increasing for fancy stock.

One should not consider a variety by the fine appearance of a picked sample of nuts without considering the quantity in which they are produced. Unfortunately, we do not have all the good qualities in any one variety or we would not be discussing this subject today.

One important point is that young trees often produce larger nuts than they do after the tree becomes older, so one should judge nuts from a tree that has been bearing for a few years.

We should also consider the age in which the trees come into bearing. Some varieties begin to produce nuts even in the nursery and give a commercial crop three years from planting in the orchard, while other varieties are several years later in coming into bearing.

The next important consideration is that of the size and weight of the nuts. The size of commercial Number 1 grade walnuts are those which will not pass through a one-inch square opening. Those above one and three-sixteenths inches are generally considered as budded nuts. They bring considerably more per pound, and the demand is growing for this quality of nut.

The weight of the nut is equally important since this varies widely in nuts of the same size. Some of the largest varieties are considerably lighter in weight than others in which the nuts are smaller. A desirable nut should be well filled with light yellowish meat without too much air space between the shell and the meat. A comparatively heavy shell is more desirable than a very light one, since the nut is better protected from being mashed in handling and less susceptible to perforation disease, which is one of the most serious troubles of the walnut grower in recent years. The hard shell is not actually perforated, but rather fails to develop. This disease has become more prevalent in the last few years and affects principally the varieties with very thin soft shells.

Nuts that are prone to crack apart easily, or have a fine light shell, are more or less injured in handling, thus contaminating the nut. It is also to be considered that since walnuts are sold by the pound, the heavier the shell, the greater the weight, and the more the returns for a given number of nuts.

The leading walnut on the world's market is known as the Grenoble. Strictly speaking, the Grenoble nut means a Mayette variety. It is not a long nut, somewhat broader at the base than at the apex. This is not very important, however, since the smoothness, symmetry and uniformity of the nuts affect their appearance more than their shape.

An ideal nut should be quite smooth, free from outside ridges and other irregularities of surface, and all nuts would be of the same general shape and appearance, giving them uniformity and individuality. A variety in which the nuts are decidedly uniform so that it is easily distinguished and recognized even by the consumer, has a marked advantage over one in which the nuts are all sorts of shapes, so that only an expert could distinguish that variety from others.

The color of the shell of the nut is not so important, as the trade demands bleached nuts even though they may have an attractive appearance without bleaching, which brings them all to about the same color.

The quality of the meat is of considerable importance, however, as nuts with the lightest colored meats are considered more desirable; while those that are dark, even though plump and of good color, are discriminated against. There is no doubt that the dark-meated varieties will be more objected to when more more of the lighter colored ones are produced.

The flavor of the meat varies considerable in the different varieties and is of much importance in a high-class fancy trade. Commercially not much importance is placed on their flavor except when they are bitter; but this is the most undesirable quality and should be guarded against in choosing the variety.

The next important consideration is resistance to blight. This is a bacterial disease which affects the young growth when it first puts out, and requires for its development moist weather conditions. It is not very prevalent in Northern and Central California on account of the drier atmosphere, but under the same conditions, some varieties are more blight-resisting than others, probably due to their vigor. As a rule, the late blooming varieties are free from blight, as they come into bloom when the weather is drier and the blight can make little headway, while the earlier varieties blossom during a moist season on account of rain and fogs which is a favorable period for its development. Certain varieties are spoken of as being immune to the blight, but while there is no such thing among walnuts as absolute immunity when conditions are favorable for the development of the disease, yet some trees do show a marked resistance and should be favored on this account.

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Spray for Brown Mites.

[Written for PACIFIC RURAL PRESS.]

Brown mites of almond, prune, alfalfa, etc., may be controlled by spraying in dormant season. They have been reported as serious from Contra Costa, Los Angeles, Riverside, Sacramento, San Bernardino, San Joaquin, Shasta, Sonoma, Sutter and Tehama counties, while small serious infestations are found elswhere.

Through the winter, only the eggs exist. They are much smaller than a pinhead and are spherical and red, having been laid in the fall in crevices of bark and twigs.

Many growers depend on sulphuring the trees in summer, but this is both disagreeable and more or less ineffective, as has been reported from Contra Costa county. The shaking of sulphur from the trees through the air during almond harvest is a serious drawback to this method of control. Lime-sulphur spray applied in winter is recommended by Sacramento county horticultural commissioner H. G. Kercheval because it kills the eggs and cleans up moss from the trees, kills San Jose scale and other scales, and helps control borers. Winter lime-sulphur spray has been used effectively in several other counties. This also catches whatever red spiders may be wintering in the bark. The spray should be applied early in winter, but of course after pruning.

ETTER BERRIES IN ARIZONA.

[Written for PACIFIC RURAL PRESS]

We have found a bed of Etter strawberries, southwest of Phoenix whose owner claims them to be the most successful berry for the Salt River country that he has ever raised. The Arizona Everbearing is a favorite berry here but it is claimed that the Etter is a firmer berry and better shipper, besides being just as good a bearer as the Arizona Everbearing.

GRAFTING OLIVES HIGH UP.

To the Editor: I find that October is the best time to graft the olive; the bark and scions work excellently and they will heal over just enough to keep them through the winter. But they do finely when grafted any time as late as June. With old olive trees I leave the main frame work of the tree and cover it with new varieties by means of side grafts. This has several advantages, besides making the tree more profitable when it comes into bearing. I find also that by following up with the whitewash right after topworking trees of any kind a better per cent will live, because most any kind of wax is inclined to scald or run off before the scion has set or made union with the tree.

Gasoline Wax Heater.—I use a gasoline soldering pot for heating the wax—the best investment that can be made for that work.

Sanger. FRANK HENRY.

WINTER SUN SCALD.

The need of whitewash or other protection for young trees or those recently topped for grafting, is explained below by Leonard Coates of Santa Clara county:

Sun-scald is caused by rapid and extreme change in temperature and the more frequent the change the worse the injury. It is always found on the south side of the tree where the sun's rays strike the tree on bright days and start active life in the portion of the bark subjected to the heat of the sun. When the temperature drops again, the protoplasm is killed and the soluble compounds formed by the renewal of activities then decompose. Sun-scald occurs both in summer and in winter, but the damage is greater in winter, because of the more extreme temperatures and the fact that the trunk is less protected after the leaves fall.

PLANT-DISEASE MEN'S RALLY.

To the Editor: A meeting of the Western American Phytopathological Society is to be held at Corvallis, Oregon, December 28, 29 and 30. This meeting will be planned primarily for the benefit of technical plant pathologists so that they may discuss problems of particular interest in the western area of United States and Canada. The practical problems connected with control of plant diseases, however, will also be considered by the meeting, so that it should be of interest not only to technical men but also to the practical plant growers who are interested in making a careful study of problems which they have. Plant pathologists and persons who are interested are cordially invited to attend this meeting.

WM. T. HORNE,
Secretary-Treasurer.
University of California, Berkeley.

SLED FOR GRAPE-PICKERS.

[Written for PACIFIC RURAL PRESS.]

We have strained our weary back as thousands of others are doing in grape picking by dragging the lug box from one vine to another, or bending over to pick it up. We observed a man last fall whose grape pickers can do more work in a day because they are not in a strain while bent over. A sled with 1x2 runners set edgwise is made just large enough to hold a lug box. This sled has a handle like a little boy's express cart, but it is connected by a short, stout cord tied to the handle about six inches above its lower end. The lower end is sharpened so it may be stuck upright into the ground to await the next move.

A Tip on Almonds

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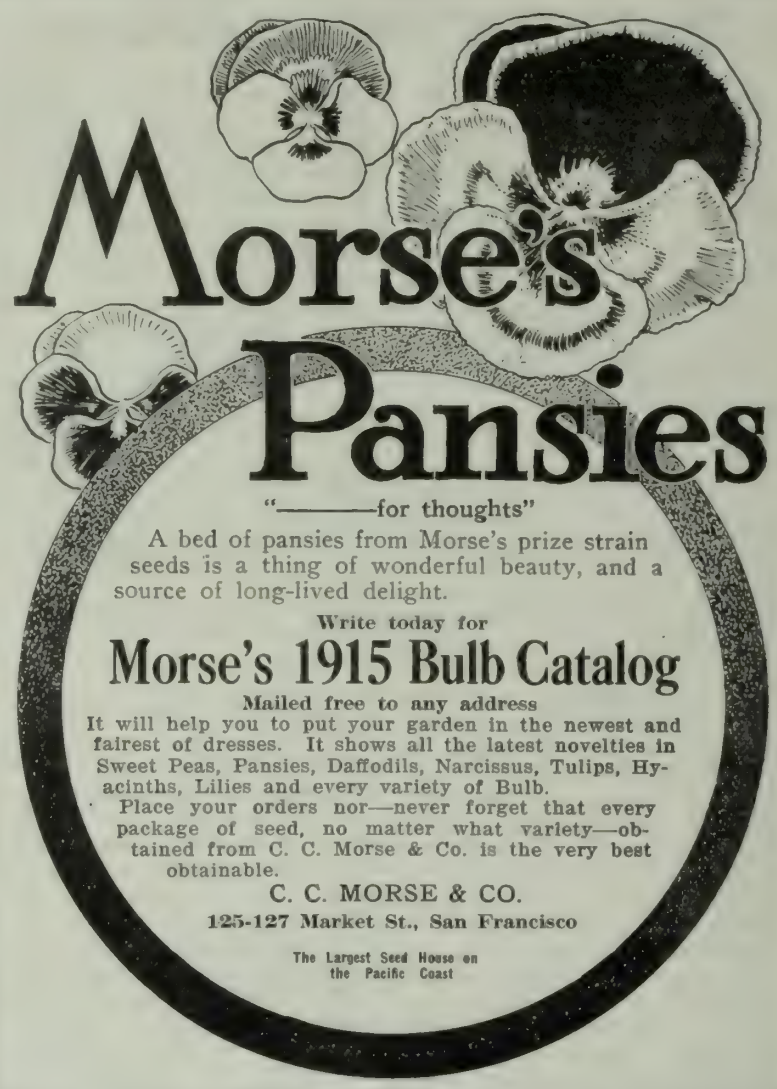

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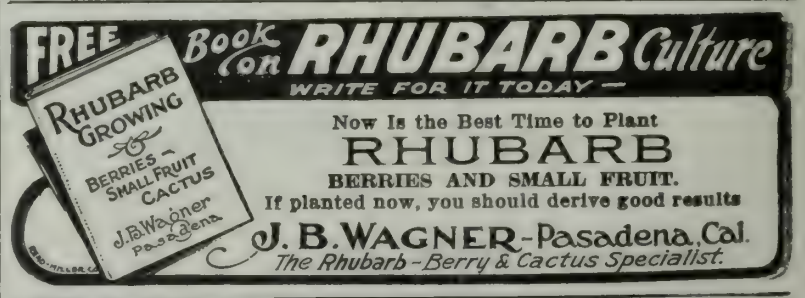

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Bridge Graft Girdled Trees.

[Written for PACIFIC RURAL PRESS]

Rabbits and ground squirrels will get in their destructive work on fruit trees old and young this winter. Besides this some blighted pear trees will have had to be stripped of their bark entirely around the trunk and down on the roots. It was on such trees that J. L. Magray of Sacramento last winter successfully worked bridge grafts which he had to splice twice to make them long enough. The graft sticks had been dried out, too, by having been heeled into cloddy dirt. Scions were cut from old trees (though Mr. Magray says suckers or shoots from young trees would have been better, and long enough to use without splicing.) The same practices will work on any trees using wood which unites readily with that variety. Some of these bridge grafts were four or five feet long, and they saved the trees. Nellis branches were sometimes used as bridges on Bartlett trees.

How to Do It.—The spliced bridges were made by whip grafting and wrapping well with waxed cloth. The dirt had been dug away to clean blight from the roots. A rectangular section of bark was cut about one-half inch by 2 or 3 inches on the upper surface of a sound root. The section of bark was peeled off. The end of the bridge scion was cut with a long smooth slope and a shaving cut from one edge squarely to the sloping surface. This end of the bridge was laid flat on the exposed wood of the root with its shaved side against the bark of the root. The whole operation was done quickly to avoid drying the newly exposed wood, and sunshine kept from it where possible. The scion was fastened in place by a couple of fine brads. For this reason it should be at least a half inch in diameter to avoid splitting. The bridge was laid as much as possible against solid parts of the tree to avoid being knocked loose and the upper end inserted in the same way in the healthy bark above the girdle. Both ends were waxed to avoid drying out before the grafts start to grow.

Additional precautions were sometimes taken in placing the cut ends of the bridge by whittling off a short slope on the upper side at the end and shoving it endwise under the bark, which must have been previously slit to allow this. It reduces danger of drying out and exposes more cambium surface for probable union.

If one is not willing to cut off the sprouts from the bridges next season and always, it is not worth while to bridge graft.

Big limbs may be saved in the same way. Sunburned or otherwise injured trees will also benefit, but to stop decay absolutely all rotted wood should previously be cut out and the surface covered with Bordeaux paste to prevent infection with decay spores. As many bridge grafts may be inserted as can be reasonably placed on the surface available, since several can carry more sap than one.

KEEP THE OLD VINES.

[Written for PACIFIC RURAL PRESS]

"I see vineyards twenty to thirty years old being taken out because the belief is that they are too old to bear (O what a mistake). Vines are (especially the Muscat or Thompson seedless and seedless Sultanas) only in their prime at that age. Under proper care any Muscat vine at that age ought to and will produce one hundred pounds of raisin grapes besides a big third and fourth crop for making the best jelly the world has ever known (properly made). Any seedless Thompson and Sultana vineyard under proper care will produce much over three tons to the acre of raisins, an ordinary crop ought to be five to seven trays to the vine."

This is the experience of Frank Henry of Fresno county.

In another part of Fresno county we saw last summer a ten-acre Muscat vineyard 32 years old planted and cared for by one of the pioneers until now. It was bearing more than many in that section and the grapes had been scarcely touched by the sunburn because the leaves were ample. Its owner claims that it is as good as any in the county. However, he says you must fertilize if you want to raise anything.

COSTS OF FUMIGATION.

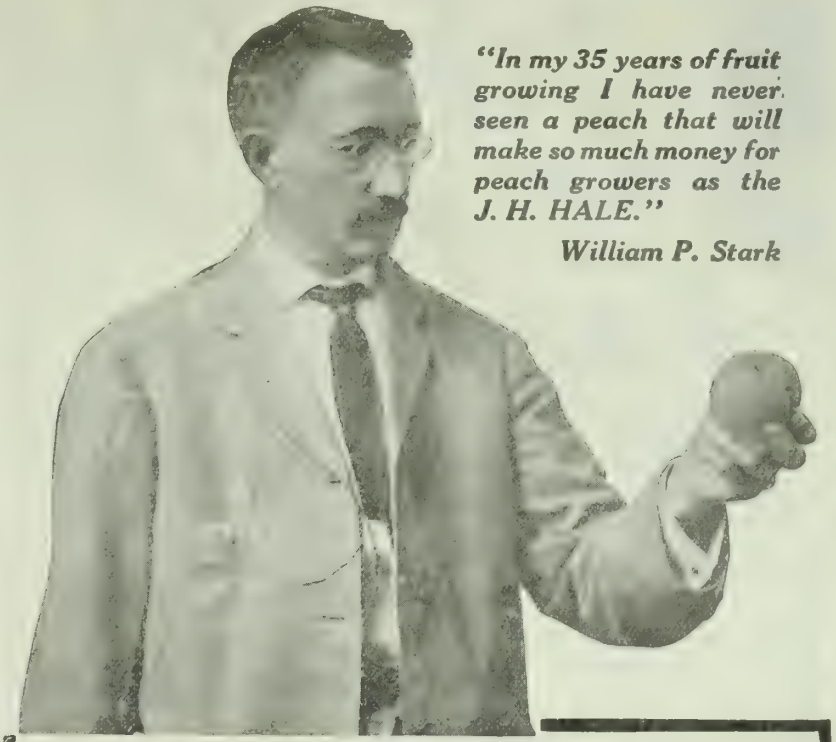
[Written for PACIFIC RURAL PRESS]

In the Porterville district the county has been fumigating orange groves in a business way since July with several outfits, buying materials at wholesale. The following costs for the fumigation of three plots in F. D. Bailey's orange grove consisting of 1443 trees, on nearly 20 acres, are furnished to the Pacific Rural Press by R. P. Cundiff, who had charge of the county work, and of the scientific investigations preceding the fumigation of this season. These costs are charged to each grove and collected by the county, so they are accurate, even to the amounts of material used on each tree. The fumigation occupied 64 hours of actual work for one gang.

Cyanide, 717 lbs. @ 27 c....	191.97
Wages, 5 men	$135.71
Sulphuric acid, 2133 lbs. @ 3½c (delivered in grove)	74.66
Rent of tents @ 5c per tree (outfit tents, pots, etc., costs about $1800).....	72.15
Total	$474.49

Average per tree, nearly 33 cents.

The average sodium cyanide used per tree was a little less than eight ounces, the average acid was 23 2-3 ounces to combine chemically with the cyanide and make the hydrocyanic acid gas necessary to kill the scales on the average-sized navel tree about 10 to 14 feet tall. This dose was applied in August. Later in the season, as the scale became more mature, the dose was increased up to about 110 per cent. On the navels it was used stronger than would be safe on other varieties, on account of spotting the fruits. Thin skinned varieties spot more easily. Mr. Cundiff gives their relative resistance to the gas in the order named: Navel, Seedling, Blood, Valencia (mostly on account of immaturity at that season of the year), St. Michael. The sodium cyanide used has about 25 per cent greater effectiveness than potassium cyanide; so one ounce was figured in August for about 125 cubic feet of space under the tents.



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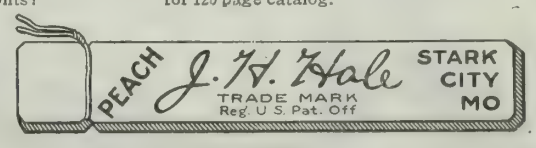

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NOTES ON GUMMOSIS.

[Written for PACIFIC RURAL PRESS By W. H. Fawcett, Whittier.]

In various forms of gummosis of fruit trees, fungi and bacteria are causal agents.

The causal agents, the fungi, kill the tissues; the tree itself produces the gum as a result of this injury.

Much gumming in apricot trees in this State could be prevented by better care in the treatment of the wounded or injured trees.

The causal agent of one form of cherry gummosis in Oregon is a bacterium. The disease may be largely prevented by budding in the limbs of Mazzard cherries as stocks, and may be effectively remedied if taken in time by cutting out diseased areas and disinfecting them.

Experiments during the past two years have shown that the causal agents in two forms of gummosis in citrus trees in California are fungi. In the treatment for citrus gummosis avoid the causal conditions favorable to the work of these fungi; e. g., excessively wet soil piled high about the trunk, especially above the bud union, and plant high-budded trees on sour stock for heavy soils for all new plantings. If trees become infected, cut out the killed bark for brown rot gummosis; scrape off the outer killed bark for grey fungi gummosis; and paint the entire trunk with Bordeaux paste. Cover large areas of exposed wood with asphaltum paint or shellac dressing, or some other good covering.

QUICK GRAFTING.

[Written for PACIFIC RURAL PRESS]

It is he who is willing to give trees or poultry or pigs or wheat or alfalfa the best chance, that is going to win when others fail. That is why we advocate practices that require more time, effort, and expense than are usually given on California farms. Such practices require more capital, but are increasingly indispensable.

We saw a grafter last winter who could put it all over one who follows our directions to be published later, both in acreage and number of scions set. He is typical of many others. He split the stubs with a wedge, trimmed the bark with a knife, inserted the scions, waxed them, and hustled to the next tree.

The splitting opened up the whole interior of the stub to evaporation, it extended far down below any need of the scion, weakened it for future loads, because it can never heal together, opened it up for spores of disease, but, worst of all, opened the bark to evaporation where it was most needed to conduct sap to the struggling scion. No such long jagged split is properly waxed by a grafter who does this kind of work, and could hardly be well enough waxed by anyone to prevent the trouble named.

WHEN TO WORK WALNUTS.

To the Editor: When is the best time to topgraft walnuts?—B. M. H., Grass Valley.

[Since it is sometimes hard for even experts to get a good stand, the best time to graft is as late as possible, in order to avoid drying out of the scion before it starts to grow. M. L. Fitch of Santa Rosa, who has had much success, thinks walnut grafting should not be done until within a month before the spring sap flow loosens the bark. In Sonoma county on Franquettes, March is the best time usually. It can't be done successfully while there is enough sap so that the bark loosens when the scion is driven in. It is that way yet in many places. We expect to have an article on how to top graft walnuts before grafting time comes.—H.]

SULPHUR HOUSED STORAGE.

A friend of Pacific Rural Press recently remarked that his friend has a lot of dried peaches stored, awaiting worms or higher prices. A Fresno county farmer stores his in the sulphur houses where the worms do not come. Last year he simply put a mouse-tight floor in each of his three sulphur houses and set boards edgewise across the doors as the fruit was dumped in. Ten tons of dried peaches were stored this way. The past season his crop was light, so it could be stored in sweat boxes each containing about 150 pounds net. They were stacked on trucks and run into the houses.

The Fresno Nursery company have leased 160 acres of land in Madera county on which they will establish a large nursery plant in the future.

If in Doubt— Plant Prune Trees

The demand for Prunes is constantly increasing and California must supply this demand. With a cheap water rate thru to the Eastern states, giving California growers control of this market, prune trees become

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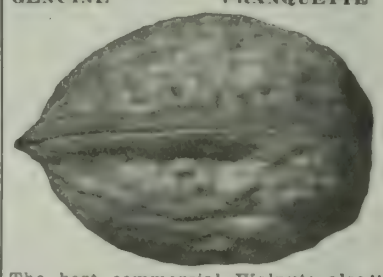

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Cost of Raising Tokays.

[Written for PACIFIC RURAL PRESS

Taking six weeks to prune 12 1-2 acres of Tokays and burn the brush right after the leaves fall, and hauling manure more or less at the same time, is not so uneconomical as might seem when compared with the contract price of $2 per acre at which the pruning could be hired. For Chas. Weber of San Joaquin county takes the pride of a father in his vineyard and finds that a few acres well tilled, give enough prosperity. Mr. Weber prunes leisurely, having little else to do at this season.

He has shaped the vines pretty straight up, and since they are 12 years old, he leaves 12 to 15 spurs of two to four buds per spur, so arranged as to balance the vine in good shape. If they were only eight years old, he would leave only about 8 spurs.

Mr. Weber's vineyard is not for sale, but he figures its value according to the crops it produces in comparison with other vineyards and places it at $600 per acre. Raw land of the rather heavy clayey type like Mr. Weber's, with a very little sand, reaching about nine feet down to the water bearing gravel, is held in this community at $200 to $300 per acre in spite of the seeming overplenty of Tokays recently. Not a great deal of new acreage is being planted, but there are a few new vineyards in this section that will increase the total crop for two or three years. The past season was the heaviest crop ever, but the markets have held up unexpectedly well.

The little vineyard owned by Mr. Weber produces, as he says, more than any other he knows of and double some that he knows. This is partly due to the vines being planted eight feet apart instead of 10 as most vines are. It is also partly due to the fertilization with about six big loads of horse manure per acre. This is applied over the whole vineyard rather slowly since it has been completely manured only once in eight years. The effect of the manure seems most noticeable the second year after application.

The heavy yield is partly due also to the cultivation. Through no cover crop is sown a good weed growth is turned under late in March if the ground is right for plowing. With a two-horse ten-inch plow about 3-4 of an acre is plowed ten inches deep in a day. This would cost $4 per day if hired. He likes the old-fashioned tooth drag for the first harrowing within a day after the plowing. Then a revolving harrow cultivates the whole vineyard in about two days at least four times before the vines grow too far out. The principle is to harrow after every rain.

Phylloxera and other troubles except mildew have not bothered here. But last season, though Mr. Weber sulphured the vines seven times, mildew got more of them than the year before with only three suphurings. A 110-pound sack of sulphur costing $3.25 last season is used each time for the 12 1-2 acres. The first application was made when the new sprouts were 6 to 12 inches long. The other applications followed at about two-week intervals, depending on the favorableness of the weather for mildew development. It takes a man a day to sulphur this vineyard, and the work is done whenever the wind does not blow. Moisture and sunshine affect the working of the sulphur, but little attention was paid to this. However, the best sulphur available is considered cheapest.

In this connection, it is interesting to note the belief of the Nevada county horticultural commissioner. This might not apply to conditions in the San Joaquin section, but seem worthy of trial. He says, "Mildew of the vine can be absolutely controlled by spraying with a 3 1-2 per cent solution of Rex just as the buds are swelling, this spraying to be followed with a 10-10-50 self-boiled lime sulphur spray when grapes are size of No. 6 shot.

Tokay picking may be postponed to meet market conditions, though it is dangerous to leave them till the fall rains without special preparation. It cost Mr. Weber $300 to pick his crop this year, and the same last year, since both were about the same amount—10 or 12 tons per acre, from which about 6300 crates were packed last season. The picking is done by hired help at $2 per day. He hauls the grapes a short distance to town himself, estimating that cost at $1 per ton. All of his packed crop is sold through local buyers who pack in their own sheds all of the goods they can handle. This gives them the advantage of a uniform pack on which eastern buyers depend and which they buy freely f. o. b. at prices which usually range above auction prices. Where each farmer does his own packing, wants a regular, dependable supply any one buyer regularly, he is at a disadvantage, for the Eastern buyer wants a regular, dependable supply of uniform stuff.

Shook and packing cost about 21 cents. Icing and freight cost 30 to 35 cents per crate.

It was generally conceded last year that the cost of production and marketing reached about 75 cents per crate, and all over that for which a crate sold in the East was profit for the grower. This of course depends each season, for each grower upon the amount of marketable fruit produced per acre and the cultivation, sulphuring, care in pruning, fertilization, age of vines, disance apart, etc. It varies in different seasons according to climatic conditions and prevalence of troubles.

A subscriber requests on Nov. 11, "information regarding smudge pots, best kind to use," etc. We would refer him to our issue of November 7.

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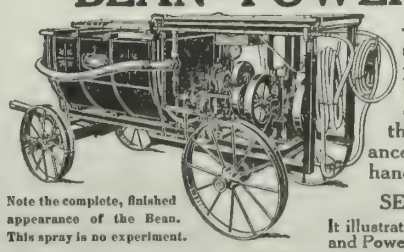

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Corn In Mendocino County.

To the Editor: I have been instructed by the Potter Valley Board of Trade, as its secretary, to write you in regard to H. P. C.'s inquiry in the Press of Oct. 24, regarding corn. When I came to this valley less than three years ago, the farmers were raising corn in rotation with wheat, maintaining that corn-growing enriched the soil. At any rate, they would say, "We raise twice as much wheat per acre following corn." Most of them now have dropped this theory and concluded that the increase is due to better tillage and the change of crop.

Another point which I desire to make is that this valley has, for the greater part, raised wheat continually for about fifty years, on soil which has been enriched in no way whatever, and in addition to hauling off the wheat, has been impoverished by the annual burning off of the stubble and the straw. Along with these facts I might also mention in passing that on the majority of the farms the tillage has been so poorly done that a plow-pan is underlying the surface at a depth of from four to six inches. I am simply mentioning these facts so that you will be able to judge what might be accomplished under more favorable circumstances.

Now, to return to the query. It is not unusual to raise two tons of corn on the cob to the acre. Very little attention is paid to selection of seed corn. Most of the corn is fed to hogs, the shipping of fat hogs to the San Francisco market being one of the chief industries of the valley. Land prices run from about $150 to $250 per acre. Gradually the wheat fields are giving way to alfalfa, which grows very successfully without irrigation, and corn. The time is not far distant when the wheat fields will have become a thing of the past and this valley be given over to dairying and hog raising.

The Potter Valley Board of Trade is composed of the following officers: E. V. Jones, president; Charles Hardisty, vice-president; J. R. Adams, treasurer; Dr. C. R. Bashford, director; J. G. Newman, secretary.

Your valued paper reaches me each week as well as reaching the homes of many other farmers here, so I am looking for greater things in the future.

Potter Valley. J. G. NEWMAN.

WHY NOT GET AFTER THE CONSUMER?

To the Editor: I have been away from home for some time and am now just reading the back numbers of the Press. I am much interested in the discussions going on concerning the Eight-hour Amendment and the Workingman's Compensation Act.

I think if farmers gave less time to worrying about the extra burdens imposed by new laws, and more time to shaping their affairs so the effect of such laws would pass on to some other fellow—the consumer for instance—it would be better for them in the long run.

For instance, in the issue of June 13, 1914, Mr. Hecke is quoted as saying, at the Davis Fruit Growers' Convention, that the yearly agricultural production in this State amounts to 372 millions of dollars. In the issue of July 11, 1914, Mr. Pillsbury tells us the premium per $100 of payroll in order to fully protect the laborers producing this stupendous item of the State's wealth, would be $3.23.

What the agricultural payroll amounts to annually, I do not know, but, whatever it may be, Mr. Williams, in the issue of Aug. 1, 1914, tells us that full compensation of injured employees is just—except in those industries that cannot pass the burden on to the consumer. At this point I would like to say that this failure to be in a position to pass the burden is no fault of the wage-earner, and the compensation act is an intelligent effort to pass it on so far as the wage earner is concerned, and if the admission of Mr. Williams be correct, and I feel sure that it is, then the agriculturist should exhaust every effort to arrange his methods of producing and marketing products so that he, too, could pass the burden, in order that he may not prevent the wage earner from receiving justice.

If the employer of agricultural labor could pass the burden, his opposition to the compensation act would be no greater than that of the employers of labor in those industries that can pass it, and then the premium would be a just charge in the agricultural industry.

Employers of agricultural labor can pass the burden by co-operative marketing. By means of a marketing organization of comprehensive scope to receive and market all products, they could set the selling price to cover all such expenditures on the part of the employer.

They would be inter-state carriers and could, like the railroads, claim the protection of the Interstate Commerce Commission in their right to add these extra costs to their selling price.

Such a method of distribution would save the farmer at least fifty per cent, which would be equivalent to doubling his income. In other words he would gain one-half of 372 millions of dollars with no more efforts than are involved in present methods. W. O. RETHERFORD.

Oakley.

[If it were as easy to do things as to write about them we would stop the European war tomorrow and soak the consumer the day after.—Editor.]

SMUTTY WHEAT.

To the Editor: Can one feed smutty wheat to chickens without injury? What is the difference between it and first class wheat for feed?—Mrs. A. H., Laws.

[Smut destroys more or less of the wheat grain and to that extent destroys its value as a feed. Its danger as a feed is the important point. Smutty or mouldy grain are likely to cause diarrhoea, indigestion; and all the attendant ills likely to follow. It is worse than valueless even if a little smutted. The spores of the smut themselves are poisonous irritants very similar to ergot.—Editor.]

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C. A. Cheadle, Mgr., Los Angeles Branch, 1235-37 E. 6th St., Los Angeles.

The Meaning of an Inch of Rain

On every daily weather bulletin or chart the amount of rainfall at various places during the preceding 24 hours is printed in inches and hundredths of inches. In a general way the public understands that a rainfall of 2 inches in one day is heavy, and that one of a tenth of an inch is light, but no attempt is made to associate the linear measurement of the water with its equivalents in weight or bulk. This is necessary for a proper understanding of the actual quantitative value of the rain, and the few figures following may prove of assistance in making calculations.

An acre of ground contains 43,560 square feet. Consequently a rainfall of 1 inch over 1 acre of ground would mean a total of 43,560 x 144, or 6,272,640 cubic inches of water. This is equivalent to 3,630 cubic feet. As a cubic foot of pure water weighs about 62.4 pounds, the exact amount varying slightly with the density, it follows that the weight of a uniform coating of one inch of rain over 1 acre of surface would be 3,630 x 62.4 equals 226,512 pounds, or 113 1-4 short tons.

The weight of 1 United States gallon of pure water is 8.345 pounds. Consequently a rainfall of 1 inch over 1 acre of ground would mean 226,512 divided by 8.345 equals 27,143 gallons of water on the acre. This is equivalent to 603 barrels of 45 gallons each, and would be sufficient to fill a tank or pool about 20 feet square and 9 feet in depth. Should a farmer desire to build a cistern to be supplied by rainwater from a roof, he can, if he knows the annual rainfall of his locality, so construct his cistern as to make the best possible use of the rainfall. For instance, a rainfall of 1 inch on a roof of 3,000 square feet capacity would mean a total volume of 432,000 cubic inches, or 250 cubic feet, available for the cistern (loss from splashing, etc., not considered). This is equal to 1,870 United States gallons, or about 41.5 barrels of 45 gallons each, enough to fill a cistern 8 feet in diameter to a depth of 4.97 feet.

WHEN WILL CORN POP?

To the Editor: I am told that popcorn is not good (that is will not pop well) until it is a year old. Is that so, and if so, can anything be done to make it good at once? I have had no experience with popcorn, but raised a little this year as an experiment and it certainly does not pop well, only a small percentage of the kernels bursting, and those bursting into rather small and not nice large pieces—or whatever you call a kernel after it has burst.—M. C. F., Redding.

[Corn will not pop well if it is either too moist or too dry. It is not true that you have to wait a year. You must experiment with both drying and moistening to see which way your corn is wrong. C. P. Hartley, the corn expert of the U. S. Department of Agriculture, in Farmers' Bulletin 553, says this: "New corn may be used for popping as soon as it has dried out sufficiently. If old popcorn will not pop on account of having become too dry, the popping quality may be somewhat restored by moistening or sprinkling with water before popping. If very dry it should be soaked in water for awhile and then spread out to dry a few days before using: or the corn may be put in a shaded place out of doors for a time where it can absorb moisture from the open air. Popcorn usually pops best when it contains about 12 per cent of moisture."—Editor.]

BEARDLESS BARLEY.

To the Editor: Where can I get the so-called "bald" barley, also the beardless type? Is there a good market for either, as a grain, or as hay?—H. E. W., Los Molinos.

[Several of the largest San Francisco grain dealers do not have this grain. There is very little demand for barley hay of any kind in San Francisco and probably other cities largely because city horses are fed barley grain and need another kind of hay. Scott, Magner & Miller say it is too heavy a feed, others that it is woodier, especially at the butt of the straw so only the upper portion containing the grain is eaten, which would explain the first statement. Farm stock can eat it if they have a variety of feeds and many horses and mules never get any other kind. Bald and beardless barleys are nearly the same thing, the grain brings a premium over the bearded types as much as $8 to $10 per ton, according to J. M. Ratto & Bro., who have it for seed, but there is no object in raising it for hay. On the other hand, much barley is often cut for hay because the market for grain promises low prices, or the grain does not promise a heavy yield, and because oats and wheat for hay are subject to more insects and diseases, though more in demand because of better quality.—R. E. H.]

ROOMY HAY LOFT.

[Written for PACIFIC RURAL PRESS]

A barn roof truss leaving a maximum space for hay storage without interference of rafters in the handling of it, may be seen in the new barn of Will Weston near San Jose. It is 35 feet across and built entirely of 1x6 boards nailed to 2x6 roofstudding. One piece extends from about 2 feet below the apex to the eaves on the opposite side and its mate is placed in a corresponding position in the other direction. A 6-foot board is horizontally placed across the apex. From each end of that, another one extends down to the first-named long one; from its end a short piece braces the truss perpendicularly to the roofstud and another 1x6 a few feet long reaches diagonally to the roofstud nearly at the eaves. There would have to be a considerable tearing apart of boards before this truss would spread out, though there is no horizontal chord directly between the eaves.

A train of eleven full cars, carrying a part of Cuba's horticultural display, has arrived on the grounds of the Panama-Pacific International Exposition. The shipment includes great palm trees, cocoanut palms, coffee trees in fruit, bread fruit, bananas, and scores of other tropical varieties. Cuba is to be given a place of honor under the dome of the Palace of Horticulture.

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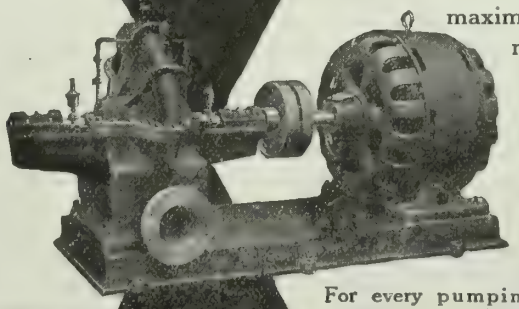

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Knowing and Disposing of Alkili.

By F. B. Headley of the U. S. Reclamation Service on the Truckee Project.]

The salt commonly called "black alkali" is seen where it has formed a crust on the ground, but when it is put on the market for washing purposes it is called "soda" or "sal soda." When pure it is a white salt, but when it comes in contact with moist organic matter it becomes brown or dark brown, due to dissolved organic matter. Because of this characteristic color under these circumstances it gets the name of "black alkali."

Black alkali is found in some parts of the Project and where it occurs it causes considerable damage to crops. An exceedingly small amount, .05 of 1 per cent, will generally prove fatal. When present in such minute quantities it is not usually visible and the grower of the crops may not suspect its presence. Sometimes there may be a visible crust on the surface of the ground and yet not enough in the soil to materially injure the roots of the plants. Not every dark stain or crust on the surface is black alkali, and many farmers are deceived into thinking it is present when there is really no trace of it in their soil, just as others think they have no black alkali when a chemical test may show its presence in large amounts.

When black alkali in sufficient quantity comes in contact with plant roots it dissolves them or "eats them off." Sometimes it occurs at the surface in sufficient quantities to girdle the growing plants. Again, it may be found in the subsoil, but with no trace of its presence in the upper soil to a depth of 8 or 10 inches. The result is a dwarfed crop because the roots rot off when they get down into the alkaline subsoil. On this type of soil a perfect stand of alfalfa may be obtained, but it will not make vigorous growth and it suffers considerably for water between the regular irrigation periods. Frequent irrigations may keep the alfalfa in an apparently healthy condition, but it cannot be made to grow satisfactorily.

When black alkali is the cause of this dwarfed condition an examination of the alfalfa plants generally shows that they are without taproots, but with the sideroots well developed. The taproots could not grow down into the alkaline soil, consequently the plants are supported only by the surface roots, which explains the slow growth and inability to stand drouth. Black alkali produces certain characteristic effects upon the soil. It puddles the soil, making it impervious to water, and often causes the formation of a hardpan at a little distance below the surface. It is the imperviousness of the black alkali soil that makes this salt so hard to eliminate.

Sodium Bicarbonate. — Bicarbonate of soda is not so harmful to plant roots as is the sodium carbonate, but under certain conditions it changes to sodium carbonate, so that it may be called "potential black alkali." It is therefore always considered a dangerous salt and is often grouped with the sodium carbonate by the chemist.

Sodium Chlorid.—Sodium chlorid is less harmful than the sodium carbonate, but when there is more than .3 of 1 per cent in the soil, the common crops begin to show the ill effects. It does not puddle the soil, and can consequently be quite easily washed out, provided the soil is not impervious, due to other causes. Sodium chlorid and sodium sulfate constitute the greater part of the so-called white alkali.

Sodium Sulfate.—Sodium sulfate is the least harmful of the salts named. It does not cause puddling of the soil. It is the most plentiful of the salts that we see crusting the soil in so many parts of the West.

Formation and Distribution of the Alkali Salts.—The soil of the Truckee-Carson Project has been deposited by water; in some places by running water and in some places by still water. In running water, only the coarses particles are dropped, while in absolutely still water all of the particles down to the finest silt are deposited. For this reason we find coarse gravel or sand, or adobe, according to the velocity of the water when the deposits were made.

The alkali salts are formed in the soil by the decomposition of rock particles, and these salts may be carried by water from the place where they are formed to other locations and left as salt deposits by the evaporation of the water.

Because the alkali salts are soluble, they are not deposited by water in the same manner as is the soil. They stay in solution in both running and still water and they go everywhere with the water until it evaporates, and then only are they left behind. When an old lake dries up there are left high and low places, swales, sloughs, ponds, puddles and channels running here and there. Evaporation then takes place unevenly from the surface of this land, being greatest from those areas where there is the greatest amount of moisture. In general the greater amount of salts accumulates at those places where the most water has been evaporated. Wherever the surface of the ground is kept constantly moist by the underground water a large amount of salts is likely to be left behind by the evaporation of the water.

Wherever the water-table rises to within three or four feet of the surface, water is brought up by capillarity, and on evaporating leaves its salts on the surface of the ground. Those who have a high water-table beneath their farms have probably watched with alarm the gradual increase of alkali on some of the lower cultivated fields.

Getting Rid of Alkali.—It has been shown that a high water-table is favorable to the accumulation of alkali in the surface soil. The first step in the eradication of the salts should be the providing of proper drainage, so as to lower the water-table to such depths that water cannot rise to the surface and, by evaporation, leave a perpetually increasing quantity of the soluble salts. After good drainage is provided the liberal application of irrigation water washes the salts out of the surface soil down into the water

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Apricots, Bartlett Pear, Cherry, Peach, Apple, Etc.
FIRST CLASS STOCK TRUE TO NAME.

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Big bearers, all known producing varieties, only true and tried plants sold. Millions of plants, years of success, large, firm, juicy fruit; every plant guaranteed. Big yields, bear until stopped by freezing.
NEW CATALOGUE FREE
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Scale on Trees, Shrubs and Bushes
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The Red Spider and other Insects, Worms and Bugs
Does Not Hurt the Plant or Tree.
Quart, 20 cts. 2 Quart, 35 cts.
Gallon, 50 cts.
5-Gallon Can $2.00, freight paid.
Special prices by the barrel.
Correspondence solicited.
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LAND
FOR RENT
Any part of 3 sections good, productive land with water, between Pixley and Spa. Only 3 miles from 2 railroads. All plowed and harrowed, ready for seeding. Heavily manured. Has been fallowed over year. Used several years as stock ranch. If seeded now to grain or sugar beets, should yield heavy crops. Will rent on crop basis or otherwise.
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Cherries are the first, the most attractive and the best fruit of the summer season. This, together with the fact that they are very profitable, yielding from $400 to $600 an acre, makes them a good "buy" for any fruit grower in position to raise them.
Our block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.
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"Fruit Tree Specialists"
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FOR SALE
Seven thousand yearling trees —in three of the best and most hardy varieties—
NONPAREIL—PEERLESS DRAKE
Budded on bitter almond and peach stock.
The most prolific and profitable varieties. Will sell in any quantity desired—prices quoted upon application. If you want good trees don't delay writing.
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Official Journal. Expert Writers. Illustrated. Only National Publication Exclusively on Nuts. Highly endorsed. Every copy bristling with NUT NEWS FROM ALL POINTS. $1.25 YEAR. Copy 15c.
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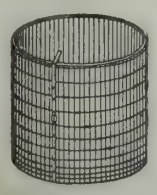
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Water troughs, tank frames, and towers. Steel and Wood Windmills. Prices the lowest.
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California Native Plants
Write for my new price list of California Native Plants, containing seventy choice species, all of which are worthy of a place in any garden.
THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.

table below, where it is carried off through the drainage system.

Providing a good drainage system for black alkali lands will not in itself always effect a cure, since the presence of black alkali causes the soil to become more or less impervious to water. Water will not leach down through black alkali soil. The application of gypsum, however, flocculates the soil and allows the water to penetrate. Gypsum also changes the sodium carbonate, commonly called "black alkali," to the relatively harmless salts, sodium sulfate and calcium carbonate. After the soil is made porous irrigation water is able to filter down through it, carrying off a part of the soluble salts and thus reducing the alkali content of the soil.

The rise of water and the consequent evaporation at the surface of the ground may be checked by mulching, by harrowing, or by shading the ground with plants, such as alfalfa. While these methods may check the risk of alkali, they are they are not permanent remedies.

ARE THERE TOO MANY COOKS? . .

To the Editor: You ask in the Press of Sept. 26, Why is it necessary to have one growers' organization to market dried fruit in Santa Clara valley, another in Sacramento valley, none at all in San Joaquin valley? Multiplication of growers' marketing agencies multiply the cost and does not increase the efficiency.

Can one of the county organizations of any kind, at any time, anywhere in the State, claim to have made a success of it? The history of the majority of them is they were started to give a clique fat pickings: 90 per cent of them fall through. Where a society has been started in good faith by fair men it's a difficult job, as the farmer knows absolutely nothing of business.

Here in Napa we have Patrons of Husbandry, Farmers' Union, Rochdale, Poultry Association, Neighborhood Farmers' Association, Road Associations, Farmers' Advisory Chamber of Commerce—probably by the time this reaches you there will be others. All these affairs meet in different buildings.

The membership of the Rochdale is made up mostly of members of the organizations that I have mentioned. We have had the Grange as far back as I can remember. In what way does it not fill the bill for the rancher? I have asked the questions of those who claimed to know. They tell me that it is strong in silk socks; that they do not encourage the rank and file of farmers to join; that they are strong on educational talk, but weak in matters pertaining to the everyday needs of the farmer. About the truth of this I know nothing.

Our farm adviser started in sometime in July. There was a notice in the papers about it. I expected to meet a big crowd; there were two of us to do the welcome act. A night was appointed for a meeting, but as a circus came to town that day it was postponed. The next meeting had an attendance of four, not enough to make legal any business we might do.

Our Poultry Association was started 3 years ago; we were going to make Petaluma a back number sure. Today we are $600 in debt to the merchants of Napa. We haven't had a meeting sufficiently large to do business for over a year. Yesterday I received a card from the Canner's Road Association (a live and progressive outfit) asking me to attend a meeting as they have abundance of road funds in the treasury and don't know what to do with 'em.

I'd like to say more upon this subject. Whenever I write, think or talk about this co-operation business the wheels finally commence to turn, but before laying down the pen I ask if some of the Dreadnoughts or Super-Dreadnoughts of the Napa Grange, Farmers' Union, Poultry Association and other associations formed for the purposes of uplifting their fallen brothers, cannot think of some scheme whereby one organization would do for the whole bunch.

Napa CHAS. BLOM.

FAMILY ORCHARD AND CACTUS.

To the Editor: How far apart should fruit trees be planted in a family orchard in loamy adobe about three feet deep lying on sandstone. How much 20 per cent. dynamite should I use. Will spineless cactus do well here. It is quite frosty.—H. E. D., Danville.

[Distance of orchard trees depends on variety and amount of land available. If necessary, you can crowd them and keep them pruned heavily so sunlight and air can circulate well. Probably one or two trees of each kind will be enough. If you have plenty of room set them as a general rule about 20 feet apart and don't let branches interlock with those of their own or other trees. That will give you enough fruit. The best varities for home use are not commercially grown, because they can't stand shipment. Unless there is good soil under the sandstone, it is worse than useless to dynamite it, because pockets will be found which will hold too much standing water for the good of the trees. Better let it drain off naturally. If you want to loosen the "loamy adobe" undersoil, use a half to one stick of the 20 per cent dynamite per hole as soon as you can, because blasting wet soil packs it worse than no blasting at all, though 20 per cent is better than 40 per cent for wet soils. Set the charge about 2-3 of the distance from surface to sand stone. If it explodes with a sharp crack use less. It should explode with a grunt or a muffled roar. Certain varieties of spineless cactus are not killed by any temperature you are likely to have, but you will want the hardiest varieties and set them in the least frosty places. Do not expect cactus to get nutrition from the air. It doesn't do it. Nor can it get nutrition from soil unless there is moisture enough to dissolve the elements so they will pass through the membranes of the roots.—H.]

The world must eat, whatever else it does, and that is the one reason we ought to hustle and get the eating ready. It can't be done in a day, and it won't be my fault if readers of the Press forget that opportunity will soon knock at their door. In order to do anything next spring the stock must be wintered right and put in shape for all they can do when the time comes.

Walnuts for PROFIT

HAVE YOU WALNUT SOIL?
Why not grow them? No better market present or future for any California product. 70% of walnuts consumed in the U. S. are imported.
OUR FRANQUETTE
and
SAN JOSE MAYETTE TREES
Grafted on native California Black root are late blooming, not frosted and practically immune to blight. See article in Pacific Rural Press of November 7th on our walnut orchard at Morgan Hill. Be sure to see samples of our nuts and investigate our trees before ordering elsewhere.
Ruehl-Wheeler Nursery
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Trees for sale and samples of nuts also at
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TREES
Grown on Sandy Loam Soil
No Spike Roots.
Almonds on Almond & Peach Root.
All Varieties of Fruit Trees for sale.
Write for Special Prices.
Land for sale in large and small tracts on small terms. We plant and care for orchards and guarantee a stand of 95%.
Plenty of water.
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FRUIT TREES
"HEMET GROWN ARE BEST"
Apricots, Peaches, Pears, Apples, Olives, Walnuts, Plums, etc., etc.
Send a list of your wants and I will quote you special prices.
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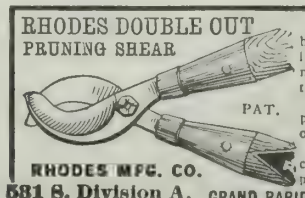

Cuts from both sides of limb and does not bruise the bark.
We pay Express charges on all orders.
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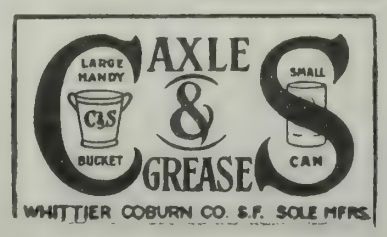

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that one-inch steel cable will hold with a

"K" HAND-POWER STUMP PULLER

absolutely without horses, powder or digging, yet it weighs only 171 lbs. and one man easily handles it.

"The "K" is simple, compact, developing a straight pull of 48 tons. It is guaranteed to do anything any other puller

will do—better, quicker and cheaper I have used it myself on Pacific Coast stumps, the large in the world, and I KNOW WHAT IT WILL DO. Used by U. S. Gov't in Alaska and by states and counties.

I Have Sold Hundreds Without a Single Complaint or even a Request for Repairs!

The "K" can't break or get out of order; made of forged Krupp steel, as simple to operate as rowing a boat. Works on side hills, marshy land, any grade or soil. If you have idle stump land YOU NEED A "K"!

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200 feet weather-proof steel cable and all equipment included. Write today for catalog showing actual photographs of the "K" at work, and special Direct-to-You Offer.

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You will be delighted with

The Commercial Engine

Does the work smoothly—simple in operation—lowest fuel cost.

Think of all the most desirable qualities in an engine—then get a Commercial—it has them all.

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200,000 FEET CHEAP WATER PIPE

Just received several car loads of new and 2nd hand Water Pipe, Oil Well and Water Casing. In ½, ¾, 1, 1¼, 1½, 2, 3 inch and many other sizes. O. D. Casing 2, 3, 3½, 4 in. Riveted and surface irrigation pipe. Big Stock. Prompt shipments. Lowest price. Write, phone or wire.

ADAMS PIPE WORKS.
2030 Bay Street,
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Phones Brdy. 1264—F1917
(Under entirely new mngmt.)

Mechanical Power on the Farm.

SHALL I BUY A TRACTOR?

[Written for PACIFIC RURAL PRESS]

[Study this over at home, answer all the questions you can, then take it to the dealers in whose machines you are interested and get their estimates written down on paper. This will give you a sound basis for decision.—Editor.]

(1) Do I need as much power as a tractor affords—acreage, kind of crops grown, distribution of work through the season—piled up at certain seasons?

(2) If I had a tractor would I do more and better cultivation, getting better crops and more of them?

Is my soil now plowed as deeply as is should be? How about subsoiling? Are all the clods mashed fine as deep as the soil is plowed? Would I be able to do each operation in cultivation at the time when it would be most effective (deep disking, harrowing and clod-mashing immediately after the plowing, while all the soil is moist and soft? Cultivating in the busy seasons. Run without rest, regardless of hot middays or cold rains.)

(3) Are there other uses to which I could put the tractor? (Work on the farm, feed-grinding, pumping water, pulling stumps, sawing and splitting wood, running concrete mixers, fanning mills, cider mills, pulling combined harvesters and batteries of mowers, running hay balers, hauling grain in the fields and manure onto them, plowing drainage and irrigation furrows, pulling scrapers and checkers, running silage cutters?)

Work on the Road. (Moving machinery from place to place, hauling grain, hay, etc., to market, pulling road graders, hauling cement and gravel for concrete buildings?)

(4) Is there any danger of personal accidents?

(5) How much will a tractor cost for total horse-power required?

First Cost, interest on first cost, convenient terms of payment, standardized basis of first cost.

Depreciation (working life dependent on reasonably careful operation, oiling, overhauling, painting.)

Insurance (Little liability to sudden termination of usefulness permanently or temporarily. Cost for total horse-power needed for most efficient work.)

Taxes (on total horse-power needed).

Cost of Operation (oil for gas and lubrication, wages of driver—experts are cheapest—one driver per total horse-power—obtaining and keeping a careful driver—extra hours required for overhauling tractor, repairs, depending on carefulness of driver—guaranty of manufacturers regarding workmanship and material no trouble to enforce; painting to prevent rust; no doctor bills or quarantines).

Cost of Maintenance Idle (shed-room).

TRACTOR PLOWING COSTS.

The following table of daily costs of plowing with a Caterpillar tractor would be more illuminating if we knew the kind of soil, its moisture, rockiness, soddiness, etc. We would like to publish similar tables from our subscribers for all kinds and sizes of tractors, trucks, etc., with additional notes as to the uses to which they are put and troubles encountered.

Cost of tractor, 75 h. p.	$4500.00
Interest on average investment at 6 per cent, 150 days' per year	1.08
Depreciation, on 5 years' life	6.00
Repairs	1.00
Oil	1.00
Fuel 35 gals. distillate at 8 cents	2.80
Engineer's labor	4.00
Helper's labor	1.50
Board	1.00
Total cost per day	$18.38
Acres plowed per day (low estimate)	22½
Cost per acre	8.16

MOTOR MASH MIXER.

[Written for PACIFIC RURAL PRESS]

Use of a motor on a poultry farm saves an immense amount of work where, until recently, O. L. Freisinn of Sonoma county, kept 12,000 laying hens.

Where poultry is the main business, feed mixing on a scientific basis means the difference between a competence and the state of being broke. Properly fed poultry is less subject to disease, grows better and produces more. So it is the almost invariable practice on those poultry ranches to supply mash feed and greens.

Mr. Freisinn uses wet mash. To mix this by hand for his immense flock would require an extra man or two all the time and the chances are that the poultry would suffer from improper mixture.

A round bottom trough six feet long, two feet wide and thirty inches deep has a rotating axle lengthwise inside, with 10 blades which stir the feed and water till it is all like the rest of it. The mixer is on a platform under which a wagon can drive. It is dumped by throwing in a gear connected with the motor.

On the same motor is a green feed cutter similar to a silage cutter, which chops green barley, oats, alfalfa, etc., into short lengths so it can be mixed with the mash in proportions of 1 to 3 for the 10,000 to 12,000 young chicks brought from the hatcheries every four months. Mixing the greens with the mash prevents fermentation before it digests, but still keeps the chicks from becoming crop bound.

COST OF PUMP IRRIGATION.

[Written for PACIFIC RURAL PRESS]

On 43 acres of 20-year prunes, J. H. Clancy of San Joaquin county aims to get water six or seven inches deep at each irrigation. With a six-inch pump run by a 20 h. p. motor, he covers the orchard by the checking system in 23 days of 12 hours each. Electricity for the pumping costs an estimated $2 per acre, while the labor of checking, aplication, and the disking and harrowing after each irrigation increase the total cost of each irrigation and the cultivation which necessarily follows to $7.50 per acre.

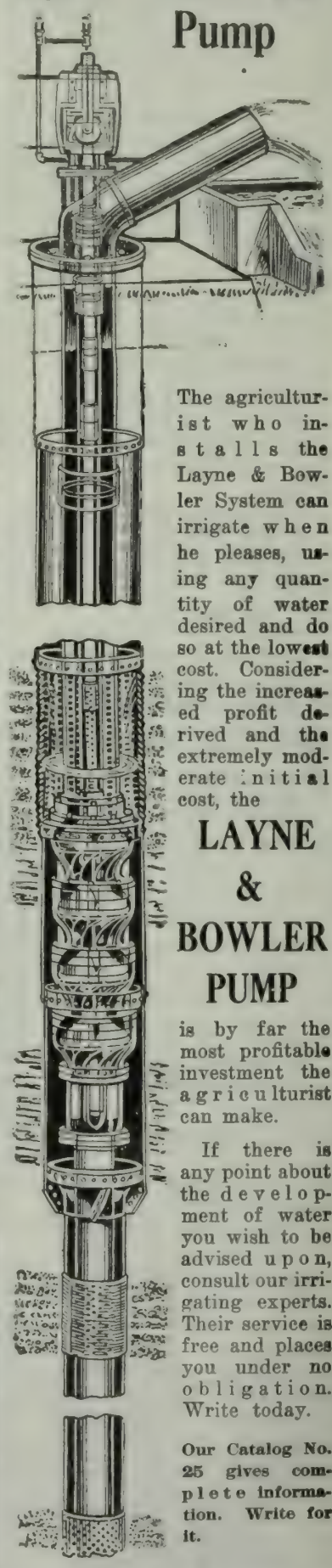
There is much economy in getting a motor of just the horsepower re-

BE INDEPENDENT OF DRY SEASONS

Raise Bigger Crops. Make Larger Profits.

PRODUCE CHEAPER WATER BY INSTLLING THE

Layne & Bowler Pump



The agriculturist who installs the Layne & Bowler System can irrigate when he pleases, using any quantity of water desired and do so at the lowest cost. Considering the increased profit derived and the extremely moderate initial cost, the

LAYNE & BOWLER PUMP

is by far the most profitable investment the agriculturist can make.

If there is any point about the development of water you wish to be advised upon, consult our irrigating experts. Their service is free and places you under no obligation. Write today.

Our Catalog No. 25 gives complete information. Write for it.

Layne & Bowler Corporation
900-910 Santa Fe Ave.,
Los Angeles, Cal.

quired to do the work. For instance, if 20 h.p. is required to lift the water it is a waste to buy a 25 h. p. motor. It will do the work, but will use more kilowatts or horsepower to do the same waterlift. Likewise, a 16 h. p. motor will do the work, but being overloaded will use more than 20 h. p. or its equivalent in kilowatts of electricity.

There is this advantage in use of a motor, however, that if the water-level goes so low that more than its rated horsepower is necessary to pull it to the surface, a motor may be overloaded 25 per cent continuously without danger of injury. This, however, is uneconomical. A motor may even be loaded up to 150 per cent of its capacity for short periods, but this quickly heats it up and wears it out. Aside from the rise in temperature, the heating may be seen by the bluish haze that surrounds an overheated motor due to the burning of its oil bearings.

Irrigating ten acres of almonds in the same county J. T. Caldwell pumps with a 6 h. p distillate engine. This requires about 7 gallons of distillate per day of 12 hours, and it takes Mr. Caldwell himself alone about 12 days to water the orchard, he taking care of the engine at the same time. His pump is at the bottom of a pit 20 feet deep so that if the water level should go down even to 47 feet he could still pump, though it averages about 35 feet below the surface while pumping steadily.

Mr. Caldwell runs the water through a wide double furrow midway between the trees, damming it in places to let it soak until he can work the long handle of his shovel three feet down in the sandy loam. He believes that running the surface water around the base of almond trees encourages black knot and other diseases.

TIME OF IGNITION IN GAS ENGINES.

The proper time for the ignition of the gas in the engine cylinder is at a point on or slightly before dead center after the compression stroke. For slow speed, long stroke engines, ignition at dead center may be early enough, but for high speed, short stroke engines the actual ignition of the gas in the cylinder should take place before the end of the compression stroke. Greater efficiency, more power, and smoother running of the engine will result.

Where great variations in speed and power are required, as in auto mobile engines, the time of ignition must be under the control of the operator. In a constant voltage jump-spark system of ignition, the time interval or lag between the closing of the circuit by the timer and the passing of the spark in the cylinder is constant, regardless of the speed of the engine. It is therefore necessary with a change in speed of the engines to change the position of the timer with a change in speed of the engine, if the time that the spark passes, relative to the position of the piston in its stroke, is to remain the same. If the engine speeds up, the timer must be "advanced" in order that the ignition take place at the same "time" relatively. If the engine speed drops, then the timer must be "retarded" or the spark will pass earlier in the stroke of the engine than at the high speed. As often used, the terms "advancing" and "retarding" the spark are misleading, as they really indicate the advancing and retarding of the position of the timer in order to keep the ignition at the same point relatively. It is this fact that accounts for the common fallacy that a late ignition gives greater power at slow speed. As a matter of fact, the point of ignition for maximum power is practically the same regardless of speed of the engine.

A. CAMMACK,
Colorado Agricultural College, Fort Collins, Colo.

OVERCOMING TIRE TROUBLE.

Tire trouble has always been one of the autoist's chief worries, and advice given by R. A. Bradley of the Colorado Experimental Station gets at the bottom of the subject in an illustrative manner. He says that in order to get a car down as cheap as possible the manufacturer sometimes puts on as small a tire as will carry the car, when if a purchaser would insist on a tire one-half an inch larger, he would get almost twice the mileage and have infinitely less tire trouble. Most blowouts are caused by undersized tires or insufficient air in them. A tire will not blow out nearly so quickly with the right pressure as it will if allowed to mash down on the sides and break the fabric.

You will find, if you keep a tire pumped to the required pressure it seldom blows out, but will wear out instead, without giving much trouble.

I have heard some say "I only ran it flat about half a mile." It may injure a tire so it will be ruined by running it a much shorter distance than half a mile.

The best thing to do is to stop when it goes flat and fix it, or take it off and run in on the rim if you must go a short distance.

A great many people are getting to understand the advantages of oversize tires and some agents are equipping their cars with them.

Another thing is to see that front and rear tires are the same size, otherwise you will have to carry two cases and two tubes to have an extra case and tube for both front and back wheels.

In "Advantages of Electricity," the Operating Charges are given as $21.65 per hour for power and $24.15 per hour for total cost of operation. Instead of dollars, these figures represent 21.65 and 24.15 cents, respectively.

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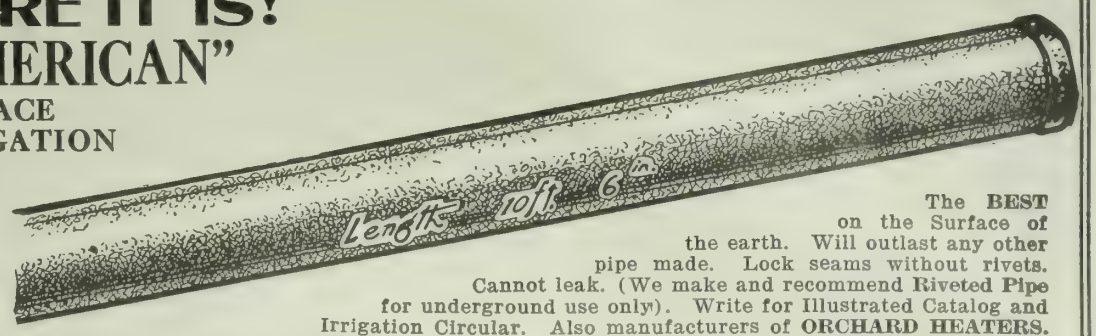
"AMERICAN"
SURFACE
IRRIGATION
PIPE



The BEST on the Surface of the earth. Will outlast any other pipe made. Lock seams without rivets. Cannot leak. (We make and recommend Riveted Pipe for underground use only). Write for Illustrated Catalog and Irrigation Circular. Also manufacturers of ORCHARD HEATERS.

AMERICAN STEEL PIPE AND TANK COMPANY
354-56 Pacific Electric Bldg., Los Angeles. Branch : 1228 "H" St., Fresno.

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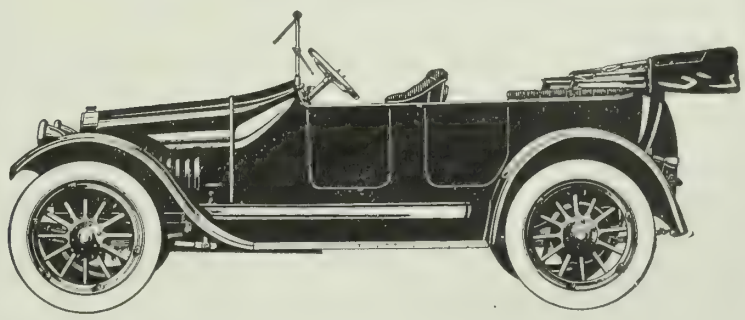
NEW LIGHT SIX

NO CAR WILL COMPARE WITH THIS.

45 H. P. Six cylinder 4x5½. 128-inch wheel base. 36x4-inch tires.

LIGHT WEIGHT, BUT SAFETY FIRST

GET THE PERSONAL TOUCH



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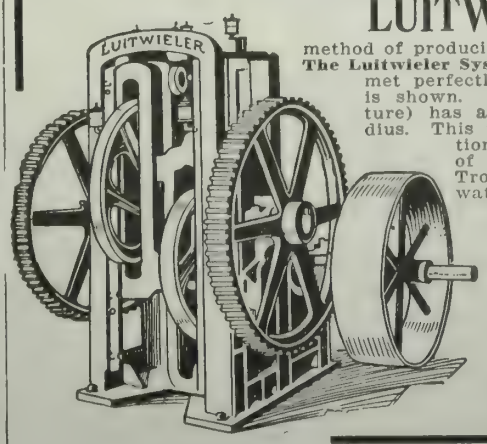
The Cost of DeepWell Pumping
CUT IN HALF BY USING THE
LUITWIELER PUMPS



method of producing water. Every condition is The Luitwieler System is positively the cheapest met perfectly and the greatest efficiency is shown. The cam (a distinctive feature) has a self-adjusting changing radius. This relieves all strain and vibration and permits an even delivery of water. Less Power required. Troubles eliminated. Cheapest water produced.

Write for our descriptive Catalog No. 12.

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707-713 N. Main St., Los Angeles, Calif.
San Francisco Agents: SIMONDS MACHINERY CO., 117 New Montgomery St.

Agricultural Review

DECIDUOUS FRUITS AND NUTS.

Plans for the establishment of a cannery at Auburn are being considered by Mrs. Jessie A. K. Hall, who has successfully operated a cannery in El Dorado county for several years.

With the intention of producing fruit in the vicinity of Mojave, several thousand apricot, apple, prune and peach trees are being shipped from Oregon for planting at that place this year.

In order to more efficiently handle their 1915 crop of fruit the Mineral King Orchard company of Tulare county have placed orders for several miles of heavy steel track and cars which will be used in transporting their products from the orchards to the railroad.

At a meeting held December 1, at Placerville, the El Dorado Standard Fruit Alliance adopted a new standard for the season of 1915 and elected the following officers: William Veerkamp, president; J. J. Harris, secretary, and Charles Schapi, U. D. Randall, C. H. Wildman and W. J. Clark as executive committee.

While in our office this week, G. P. Rixford, special fig investigator of the U. S. Department of Agriculture, stated that in his judgment the fig crop of California this year would amount to 6,000 tons. Of this total one-third was of the Smyrna variety. Very little trouble has been found in finding markets at home for the product when well cured and packed.

Members of the Farmers' Union at Gilroy are diligently considering the erection of a cannery and packing house with the idea in view of ridding themselves of the speculators' tyranny and to secure other advantages that come through co-operation. It is expected that the proposition will go through as soon as a plan for financing can be devised.

Packers of both green and dried fruits in Fresno are making efforts to bring to that city 3,000 delegates of the Fruit Jobbers' association of the United States and Canada which are to meet in Los Angeles in February. As these are the men who ultimately handle the fruit products shipped from that county it is believed that they could gain a better insight into the industry by a visit to the vineyards and orchards of that district.

CITRUS AND SEMI-TROPICAL.

The orange crop around Rumsey, Yolo county, is now being marketed and is said to be a good one.

The first shipments to be made by the Lincoln Citrus association were to have been made from there this week and it is expected that between 25 and 30 carloads will be handled by that concern this year. A good crop is reported from there and the quality is said to be excellent.

Statistics recently issued show that the olive bearing acreage in northern California amounts to 49 1-3 of that of the State. Butte, Sonoma and Tehama counties lead in the northern part of the State in bearing acreage while Los Angeles county leads in both bearing and non-bearing acreage.

What is said to be the largest shipment of oranges ever shipped by an individual shipper from California was the 50-car train which left Porterville last week for Kansas City, where they are to be distributed to various points in the United States. W. O. Randolph who was the shipper stated that the approximated value of the 50 cars was about $400,000.

In his crop report on oranges and olives in Tehama county, County Horticultural Commissioner Charles B. Weeks states that oranges will be 100 per cent of a full crop around Orland and will be far in excess of the government's standard for sweetness. Olives he says will be 100 per cent, although more than 60 per cent of this will not be of such high quality as the crop of last year.

The certification plan of selling oranges now in use in this country is said to be highly approved of in Canada and it is believed that by next season it will be impossible to market any other kind in that country.

Heavy shipments of oranges are now reported from the citrus districts of the San Joaquin valley, in many instances all previous records having been beaten by a large margin.

Due to the competition of water carriers the railroads are endeavoring to raise the number of boxes of citrus fruits to the car, which will allow of cheaper handling and hauling. The matter has not yet been definitely decided upon as many of the shippers believe there are smaller cities which can handle 400 boxes, the number now contained in a car, but could not handle 466, the number advocated under the new ruling.

A dispatch form Lindsay says that a peculiar condition is being found in the testing of oranges which is now going on in order to comply with the government standards. One day the fruit test one part acid and eight parts soluble solids while the same fruit will in a few days test less, or making it immature. This condition is said to be due to the increase in the acid part just as they are on the verge of being marketed. Care should be taken not to pick the fruit before this second stage in the ripening point is reached.

Estimates are now being made that the citrus fruit crop in the vicinity of Corona will be at least 300 cars more than that of last year which amounted to a total of 1250 cars. As the season advances it is seen that the shipments of oranges and lemons will be about the same. While the orange crop is a little smaller than that of last year the quality is first-class, and the lemon crop was never in better shape. Oranges are coloring up well there and are unusually sweet for this time of the year.

ORNAMENTAL.

Since the announcement that the largest walnut tree in the world was situated in Colusa, F. H. Schutz has announced that he has a tree on his place near Arbuckle which is 102 feet high and measures 19 feet and 9 inches in diameter nine feet from the ground. The big tree was planted in 1868.

William Vortriede, State gardener at Sacramento, has recently made an inspection of the trees and shrubs at the Chico State Normal school, where he found 48 different varieties of trees and 22 varieties of shrubs. The trees are all labeled now and comprise, so he says, one of the finest collections that there is in the State.

Work is now being commenced at the Government plant introduction gardens at Chico for the distributing of over 150,000 plants which will go out to different parts of the United States this year. On account of the European war which has tied up shipments of foreign-grown bulbs and plants it is expected that the 1916 shipments from that place will be materially reduced.

VEGETABLE JOTTINGS.

Tomatoes were still being shipped from Dinuba to the city markets last week, which shows that part of the land in that vicinity is in a frostless situation.

Present estimates are that there will be 2,000 carloads of celery shipped from Antioch this year as com-

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pared with 1250 carloads last year. The acreage there this year amounts to 3210 acres and the crop this year is said to be excellent in both quantity and quality.

A report from Imperial valley states that with the completion of the highway system from there to San Diego and the construction of the proposed highway to points in Arizona, automobile trucks will doubtless carry large quanties of vegetables and other farm produce to distant markets. Transportation charges from this valley have in the past been a drawback for the successful competition in city markets with other sections more conviently located, and the new system would doubtless greatly benefit the valley farmers.

IRRIGATION AND DEVELOPMENT.

With the acquisition of the main water supply by the county the water districts of Imperial valley are said to be considering the advisability of closer co-operation among each other.

Definite steps for the forming of an irrigation district were taken at a meeting of fruit growers held in Lindsay last week. It is planned to dam the west end of the Yokohl valley and draw upon the waters, of the Kaweah and Tule rivers.

A series of meetings are being planned by the development committee of the Chico Businessmens' association with an idea of creating interest in the proposed establishing of an irrigation district in that part of the Sacramento valley.

Word comes from Willows to the effect that the Sacramento Valley Irrigation company has closed its offices there as well as in Los Angeles and San Francisco and that no sales will be made of their vast land holdings there for an indefinite time. It is supposed that this is the result of the litigation that the company has been forced into by other interests.

Announcement has just been made that the firm of Miller and Lux will develop for subdivision purposes a part of their large land holdings in Kings and Kern counties as well as their holdings in the Carmel Cattle company. It is reported that the company plan to build irrigation ditches and spread the waters of Goose lake over the land to the north and the east.

SECRETARY HOUSTON'S REPORT.

In his annual report just issued, David F. Houston, secretary of the U. S. Department of Agriculture, has taken up many subjects that are of interest to the farmers of this State.

On the proposed change in the administration of the national forests so that they may give immediate assistance to communities, he advocates the further aiding of farmers in such sections through a system of government roads, the money for which would be advanced by the government and later repaid through the moneys received from the timber that such forests contain. He points out that the new settler in these districts is sorely in need of good roads and that under the present system funds are not available for giving him such aid.

The secretary then recommends changes in the homesteading system which would allow of releasing certain parts of the national forests which are suitable for farming and acquire from States in their stead lands which are suitable for forestration purposes but which under the present system can not be included in the national forests.

In regard to crop production the report shows that many products which have heretofore been of minor importance are now taking the lead, among them being the dairy industry with an approximate value of $600,000,000, orchard fruits with a value of $140,000,000, hay and forage crops with a value in excess of $800,000,000 and an increase in the poultry industry to a point where its annual value is about one-half that of an average cotton crop. The average yield per acre for the past year has been 9.4 percent greater than that of 1913, and except for oats, corn and flaxseed greater than the average for the last 10 years.

Notable decreases in the number of livestock are noted from the census of 1899 to that of 1909, in spite of the fact that diversified farms are more numerous than before and our grain production has been materially increased. He states that it is evident we have been considering the meat supply too much from a range standpoint, and while it is obvious that that industry must be encouraged the greatest hope for an increased meat supply lies in the more satisfactory handling of grazing lands, more attention to the raising of beef on the small farm, in increased attention to small animals such as swine and poultry and in the eradication of such diseases as cholera, tuberculosis and other animal diseases and pests.

A need is also pointed out for the better standardization of farm products. The need for co-operative credit association and rural credit is also dwelt upon quite extensively.

Federal aid should be given community earth roads according to the report and a better system of disseminating information of crops, yields, etc., inaugurated. Also means should be devised for carrying instructions to the farmers through personal contact instead of in bulletins, circulars and the like.

The report concludes with a statement of the plans for the re-organization of the department so that the research, regulatory and educational extension work will be arranged to avoid conflict of interest, lost motion and efficiency.

GENERAL FARM CROPS.

A report from Visalia states that 800 acres of the Bliss ranch in Tulare county have been leased and will be planted to sugar beets next year.

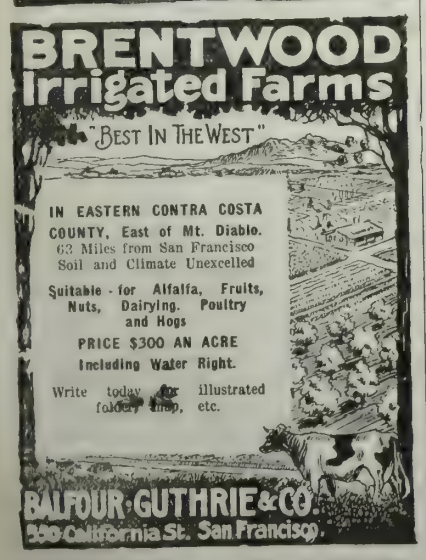
The splendid crops of beans harvested in Sutter county last year and the high prices received are said to be incentives for an increased acreage of beans both in Sutter and Yuba counties next year. Lady Washington and kidney beans are the most popular varieties in that section.

A San Francisco judge has just decided that hay buyers are not compelled to pay for hay which is full of dirt. The court ruled that the hay buyers do not buy dirt and therefore do not have to pay for such hay. It is claimed that many farmers throw in chunks of dirt in the hay press in order to increase the tonage of their product.

Many farmers in the Imperial valley are said to be contemplating the planting of at least a part of their ranches to sugar cane next year. If 3,000 acres can be signed up a company stands ready to erect a factory for the manufacture of the raw product into sugar. It is claimed that the crop can be profitably grown in that section.

Plans are being considered for the erection of a rice and paper mill in Colusa county next year to care for the rice straw, which is assuming large proportions with the heavy acreage of rice which is now being grown in the Sacramento valley. This should be a big asset to the rice industry as it would make possible the disposal of straw which is now practically a waste.

The hop market seems to have gone all to pieces according to reports from Santa Rosa, which say that buyers are only offering six cents a pound while growers are holding for 10 cents, which is said to be below actual cost of production. Growers charge that the market is being manipulated by the buyers for their own benefit as present conditions do not warrant the low prices.



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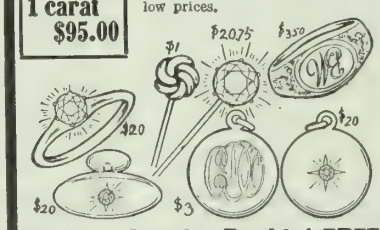

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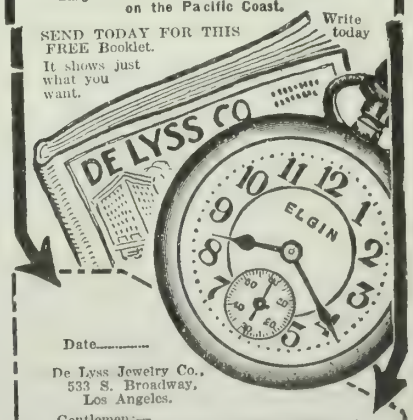

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Report of the Dairy Industry.

[Written for PACIFIC RURAL PRESS]

In spite of the slap in the face that California dairymen have received by the tariff reduction on butter, the State's dairy industry is floating along to higher production very rapidly, as is shown by the annual report of the State Dairy Board, just issued for the year 1914.

In face of this increase in production however the total annual value of the dairy products has been smaller than for the year 1913, due to the falling off in butter values, which amounted to $1,471,326, as shown in the following table of production and money received from the various products for the years 1913 and 1914:

1913.	
Butter, 55,542,709 lbs.	$17,840,318
Cheese, 5,600,972 lbs.	899,516
Condensed, evaporated and powdered milk, 8,637,928 lbs.	777,468
Casein, 665,000 lbs.	33,250
Market milk, cream and ice cream	11,000,000
Calves produced on dairies	2,000,000
Skim milk and butter milk	1,500,000
Total	$34,050,552
1914.	
Butter, 59,286,460 lbs.	$16,368,992
Cheese, 6,016,815 lbs.	950,055
Condensed, evaporated, and powdered milk, 14,153,401 lbs.	1,076,300
Casein, 992,917 lbs.	46,146
Market milk, cream and ice cream	11,500,000
Calves produced on dairies	2,500,000
Skim milk and butter milk	1,500,000
Total	$33,941,493

It will be seen that market milk still continues to be the closest rival of the butter business, although condensed, evaporated and powdered milk has made a big jump as well as casein and cheese, which probably points to the way that a large part of our dairy products will find a better than butter market in future years and thus slip one over on the tariff makers.

In the race for butter supremacy among the counties, Stanislaus easily outdistances all of her rivals with 8,184,390 pounds as against 7,541,900 last year. Imperial, her nearest competitor, went up the ladder to 5,710,284 pounds as compared with 5,398,228 pounds last year, and Humboldt county came into third place with 5,251,887 pounds as against 5,168,990 pounds the year before.

Tulare secured fourth with 4,362,290 pounds a gain of 391,073 pounds; Merced was fifth with 3,876,875 pounds; Fresno was sixth with 3,292,572 pounds and then came Kings county with 3,164,620 pounds, a gain of 850,657 pounds, which shows that dairy cows are being more thought of in that county.

In 22 counties the cheese production for the year was greater than that of last year, while 11 counties experienced a slight falling off, but but the total for the year in all counties was 6,016,815 as compared with 5,600,972 pounds.

Monterey, the banner cheese county, in 1913 gave way to Santa Clara county whose production was 768,101 pounds or a gain of 388,392 pounds for the year. Several counties that did not report any cheese last year appear in the totals this year and all in all we may call 1914 a good cheese year for production as never since 1908 has this year's total been equaled.

The average price of both cheese and butter was less than for the year previous, that of butter being 27.61 cents as compared with 32.12 cents last year and 30.77 cents in 1912, while cheese averaged 15.79 cents as compared with 16.05 cents in 1913, and 15.46 cents in 1912.

In the inspection work the past year from 10 to 12 inspectors have been enrolled who have inspected 22,000 dairies, creameries, cheese factories, milk condenseries and plants during that time and have been steadily on the watch for possible adulterations and short weights of dairy products.

Each inspector, except those employed by Tulare and Imperial counties, has had from four to nine counties to cover. The inspection work has been highly complimented and nearly everywhere they have had the hearty support of the public.

That they have not prosecuted anyone unless there was an abundance of evidence is shown by the fact that 99 per cent of the cases against defendants were successful, although for the entire time there were 513 cases prosecuted.

One gratifying point brought out in the report is the success of the new as well as old cow-testing associations in the State, showing that with our increased production we are gradually falling in line with the more advanced ideas of business efficiency on the farm.

This factor is given considerable attention in the report showing that there are now nine such associations in operation and another now being formed at Napa.

The Ferndale association continues to lead all others by a large margin, their total membership now numbering 3800 cows, which is said to be the largest association in the country. Stanislaus county supports two associations, one on the east side of the county and one on the west side. Other associations are located at Gridley, Tulare, Woodland, Los Angeles, Riverside and Bodega.

The report suggests that it would be well for the State to furnish these new associations with testing apparatus and books in which to keep the records, which would greatly facilitate the matter of getting them started. In Denmark a large proportion of the expenses incurred in maintaining the testing associations were for years defrayed by the government and in ten years after the first association was started the total number was 500, although that country is only one-tenth as large as California. This is a line of constructive legislation that our dairy cattle breeders' associations and other dairymen's associations should get to work on at an early date as it is one of prime importance to the dairy industry.

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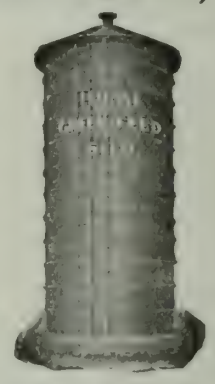

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expected from a good cow over a poor one, a thing which is only possible where the milk is weighed and tested at regular intervals, the report gives the estimated cost of keeping a 150 pound cow and a 300 pound cow, also showing the value of their products for a year's time.

To accomplish this they give the following figures:

Average cost of keeping 150 pound cow:

Feed	$30.00
Milking and care	24.00
Interest on cost of cow at 7 per cent	3.50
Depreciation of cow	5.00
Interest on cost of equipment necessary in connection with keeping	3.00
Total cost	$65.50

Income from cow yielding 150 pounds of fat:

150 lbs of fat at 30c	$45.00
4,000 lbs. skim milk @20c a cwt.	8.00
One calf	2.00
Total income	$55.00
Loss	$10.00

Average cost of keeping 300 pound cow:

Feed	$45.00
Milking and care	27.00
Interest on cost of cow at 7 per cent	7.00
Depreciation of cow	10.00
Interest on cost of equipment in connection with keeping	3.50
Total cost	$92.50

Income from cow yielding 300 pounds of fat:

300 lbs. of fat at 30 cents	$ 90.00
7000 pounds of skim milk at 20c a cwt.	14.00
One calf	10.00
Total	$114.00
Profit	$ 21.00

Much importance is also paid to the proper manner of erecting barns and milk houses with a view to raising the quality of our dairy products to a higher standard, in order that we may be better able to compete with the markets of the world.

The report is one of the most comprehensive ones ever issued by the bureau and much credit should be given the secretary and other members of the bureau both for the report and the efficient manner in which they have attended to their work the past year.

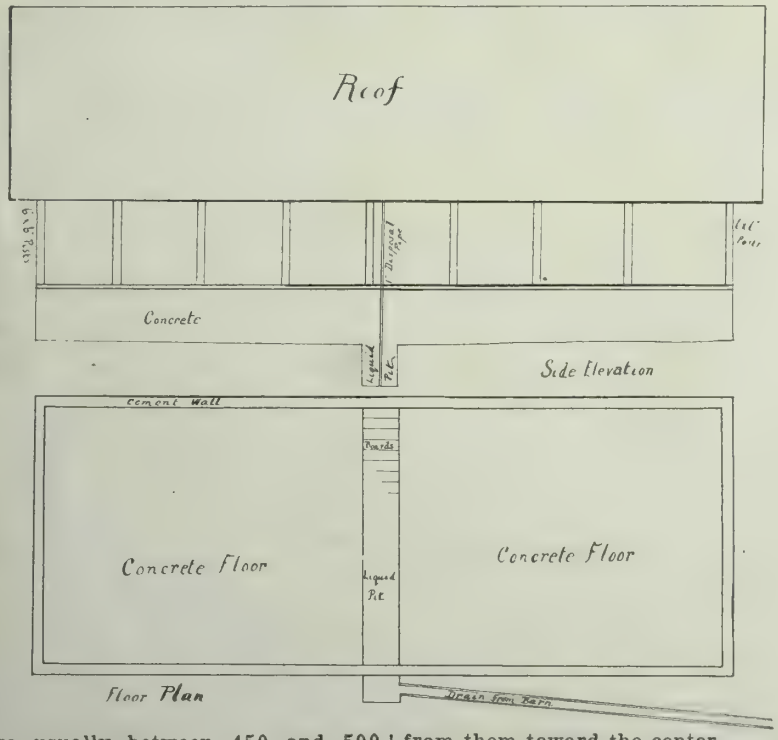
USING AVAILABLE FERTILITY.

(Continued from page 585.)

manure is hauled to the fields in manure spreaders, space having been left on each side of the pit for a driveway, which allows of loading direct from the pit. There are usually between 450 and 500 tons of manure at this time to be removed, which takes two men with a team and two manure spreaders twelve days to haul. This has been used on 80 acres of orchard land so far, as that land was worst in need of fertilizer, but from now on different fields will be hauled to each year till the ranch has been entirely covered.

The advantage of having a sloping floor in the pit is very noticeable at this stage of the work, as it allows the workmen to stand on a dry surface at all times, the work being started from the ends and the liquids from the pile running away from them toward the center.

When handled in this way the covered manure pit allows of almost perfect control of conditions within the pile and also solves the question of a sanitary disposal at a cost very much less than the cistern or other methods usually in use over the State.



DO HOGS HARM ALFALFA?

To the Editor: Will hogs root up the alfalfa if they are turned on it to pasture it off, even if they are ringed in the nose?—G. B., Patterson.

[It seems to be a part of a hog to have his nose buried in the ground a part of the time, but if you use discretion in pasturing there is no reason why your alfalfa should suffer. It is best not to pasture young alfalfa, neither is it well to pasture any but old stands of alfalfa in wet weather as the hogs will root worse when the ground is wet than at other times. Most alfalfa growers here have found it entirely practicable to pasture alfalfa provided they do not overstock the fields, without the use of rings, although some use rings as a precautionary measure. Alfalfa under irrigation here does not have to be nursed very much and the cultivation that the hogs do may help more than harm the plant.—Editor.]

The silo farmer is usually the man who gets the most out of the feed he grows. The time is coming when silos will be as commonplace on the dairy ranch as the electric motor and gasoline engines.

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Our newly established sales department can sell your horses and mules at your own price. Feeding charges, 50c a day. We handle all kinds of horses. Saddlers a specialty. Auction sales regularly after the first of the year.

We expect a
large shipment of Horses in the next thirty days.

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"THE DISTINCTIVE SAN FRANCISCO ROUTE"
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On your next trip consider the advantages offered by this route.
THROUGH THE FEATHER RIVER CANYON AND THE ROYAL GORGE, WHERE BEAUTY OF SCENERY IS COMBINED WITH EXCELLENCE OF SERVICE AND EQUIPMENT ON TRAINS OF HOMELIKE COMFORT
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I have some good stallions for sale and a few young mares.
Prices as Usual in spite of the War
You had better buy now, as importations have stopped.
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HENRY WHEATLEY,
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AN ENGINE OR PUMP SHOULD BE BOUGHT JUST THE SAME AS A HORSE OR COW THE POOR ONES COST LESS DO LESS - DIE SOONER - BUY WITH YOUR EYES OPEN WRITE FOR OUR HANDSOME CATALOG - DON'T WAIT UNTIL YOUR CROP IS DEAD.
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With the Live Stock Men

A report from Tulare states that the owner of the El Dorado herd of Holsteins there has sold a six-months old bull calf to a Corcoran man for $250.

A report from Hanford states that W. F. Bernstein, the Poland China breeder, has made several sales of that breed recently.

Chas. Weaver of Tulare has recently purchased five head of registered Halsteins in Sonoma county with which to build up his herd.

The firm of Taylor & Braren of Paso Robles have recently purchased 1,100 head of Mexican cattle which were expected to arrive this week.

During the past month J. A. Walker of Montague sold 125 head of dairy cows to George Wingfield of Nevada; very likely for distribution on the Fallon Irrigation project.

A dispatch from Sacramento states that an officer of the California National Guard is now on a trip to Alturas, Modoc county in search of suitable horses for army purposes.

Members of the Ventura County Farm Bureau have organized a swine breeders' association with the intention of improving and building up the hog-raising industry of that section.

Two farmers in the Salinas section purchased purbred stallions last week which will be bred to mares in that section with the aim in view of raising better horses and more of them.

Farmers in the vicinity of Watsonville state that they have entirely wiped out the cholera which was reported from that section some time ago.

The tax rate on pasture lands in Nevada has been materially lowered from the original charges made by the Nevada Tax Commission. The reduction applies to all meadow and pasture land.

Despite rumors to the contrary, a report from Fresno states that so far no horse buyers have been in that section in the interests of European countries. There have, however, been buyers in that section for the U. S. government.

A dispatch from Modesto states that State Dairy Inspector C. A. Starkweather has recently caused the arrest of a manager of a local creamery there on the charge of undertesting the percentage of butterfat in cream received from dairymen.

According to their report for November, just issued, the Madera Cooperative creamery which was recently started at Madera paid out $4,660 for cream received during the past month and have increased their production during that time 200 pounds daily.

Many new improvements have been made at the Hughson Condensed Milk company's plant at Hughson in the past few months, such as new machinery and equipment. A report from there states that the concern is doing better business now than ever before in its history.

In company with J. I. Thompson of Davis, a judging team composed of boys from the University Farm at Davis are visiting the Pacific International Stock show being held at Portland, Oregon, this week. They will compete with other judging teams in the judging of fat stock.

At a meeting held in Chicago last month swine breeders from all over the United States organized what is to be known as the Nationali Swine Breeders' association, whose purpose it is to advance the swine-raising industry in every possible way. Among those in attendance was Carlos E. Moore of the Whitehall Est. company at Tracy.

The Amador and El Dorado Stockmen's association went on record at a recent meeting as opposed to the scrub bull being used on the ranges, and passed a resolution in which it was pointed out that it was a menace to the industry to allow uncastrated calves to run on the range. They expect to promote legislation that will overcome these evils.

The Tagus Ranch company of Tulare county, who have boasted of the finest equipped dairy in the lower end of the San Joaquin valley, have disposed of all of their dairy cows and from now on expect to produce beef cattle on their large ranch, using as a foundation for their herds the Polled Angus cattle that they shipped in from Texas last spring.

A large number of sheep will be pastured on alfalfa lands in the section around Fallon, Nevada, this winter due to the poor range conditions prevailing in Eastern Nevada and Western Utah. The railroad has granted a special round trip rate to make the proposition possible.

A number of farmers in Sonoma county have recently purchased the Percheron stallion Laos, from Thos. McLaughlin.

In a letter to this office from A. M. Henry, he states that he has recently delivered a carload of purebred Berkshire and Poland China swine to J. C. Anderson's Wineville ranch at Riverside county. He also states that as soon as the foot-and-mouth disease quarantine is lifted from the Eastern States he will go east and bring out a carload of choice Poland Chinas, partly for the Knob Hill ranch and partly for Mr. Anderson.

The November report of the Stanislaus Cow-testing Association shows that a Holstein cow owned by P. Brunold produced 78.6 pounds of fat in the 30 days, which was the record for the month of any cow entered. Brinka De Kol, owned by J. Palanda, has an association record for the past seven months of 455.7 pounds of fat. The report shows that among the 50 highest producing cows the Holsteins led with the Jerseys a good second.

A steady to slow cattle market prevailed all of last week at the Portland Union Stock Yards. Receipts were moderate with quality good in the main. Steers were quoted at $7.50 for tops, and best cows and heifers brought $6. Swine prices dropped in sympathy with hogs in the East, opening at $7.50 and closing at $7. All receipts of sheep were quickly snapped up at $7 for lambs and $5 for ewes, receipts continuing very light, with demand strong.

PLANTING CACTUS DRY.

To the Editor: I have a patch of the Burbank spineless cactus. It is three years old and has made a good growth. I want to take the slabs off and plant them next season. I understand it should be planted about May 1, but I do not know when the slabs should be taken off the main plant.—A. W. S., Willow Creek.

[If there is no danger of frost or rotting, there is no reason to take the slabs off until warm weather comes. It is very hard to prevent their rotting if placed in piles, and there usually isn't room to spread them out. Take the slabs off sometime in June or July and lay them in the sun until the raw end is well dried over and perhaps the skin somewhat shriveled. Then plant them without water. Their own moisture is ample. More water is likely to make them rot underground before roots are established.—H.]

If you are in doubt as to the value of purebred swine, go over to your neighbor who has some and compare the weight of his hogs with yours of the same age.

Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

HORSES AND MULES

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old; also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

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O. I. C. SWINE—The White Breed. Entire herd immunized against hog cholera. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars in use. All stock sent out will be immunized, registered and crated at purchase price. Send your orders now. C. B. Cunningham, B. J. Mills, Sacramento County, California.

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TEN REGISTERED HOLSTEIN COWS for sale. Young and more with big records. Also a few well-bred heifers and bulls up to nine months old. K. W. Abbott, Milpitas, Cal.

AYRSHIRES—For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—Young bulls sired by King of Riverside and Lakeside Model Prince from A. R. O dams. J. H. Harlan Co., Woodland.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

JOHN LYNCH, breeder of Registered Shorthorns. Milk strain choice. Young stock for sale. Box 321, Petaluma, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

20 HOLSTEIN COWS for sale—14 fresh and six springers; heavy milkers and good individuals. Address E. J. Weldon, Box 962, Sacramento.

REGISTERED HOLSTEIN FRIESIAN CATTLE and Duroc Jersey Hogs. W. H. Ginn & Son, Corcoran, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

AYRSHIRES FOR SALE—Pure-bred young bulls from producing families. Wyndham Dairy, Redding, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Houdridge, Modesto, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

HOLSTEINS—Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

ONLY FIVE registered Holstein bull calves left. J. W. Benoit, R. 2, Modesto, Cal.

REGISTERED HOLSTEINS—Auctioneer and Breeder. I. J. Gilkerson, Stratford, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAllister & Son, Chino, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM.—Pure bred Holstein cattle. Los Banos, Cal.

PACKWOOD FARM HERD of Holsteins. W. F. Mitchell, Visalia, Cal.

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70 HEAD DUROCS REGISTERED—Must be sold immediately. Breed sows and gilts, fall pigs, both sexes, and a number of yearling service boars. We are closing out everything. If you want a bargain, drop us a line. All mature stock. Chlorea immune. Lindquist Bros., Turlock, Cal.

STEY-BRAE BERKSHIRE HOGS, headed by Bandmaster 2nd, junior champion Iowa State Fair. My females were winners at Iowa, Wisconsin and Minnesota State Fairs. Address E. B. MacFarland, 410 Call Building, San Francisco.

BLATCHFORD'S PIG MEAL weans pigs easily and safely; no trouble; no milk. Write for free folder "The Safety Route from Pighood to Porkage." Coulson Co., Petaluma.

PURE-BRED Duroc-Jersey Swine. Prize winners. Limited number only. $10 each F. O. B. Western Hog and Land Syndicate, 919 Hearst Bldg., San Francisco.

BERKSHIRES REGISTERED—Young boars and bred sows and pigs of all ages. Brae Bourne Ranch, R.3, Box 69, Santa Rosa, Cal.

BERKSHIRES—Boar pigs ready for delivery, from Crusader's Duchess 11th 197319 by Baron Duke 194th 191105. F. M. Stern, St. Helena, Cal.

BERKSHIRES—Bred for size and bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Lava, Inyo County, Cal.

REGISTERED BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

BERKSHIRES—Utility and choice Registered Pedigree stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows, and young stock for sale. Immediate delivery. Jno. R. Daggs, Modesto, Cal.

POLAND CHINAS—Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

POLAND CHINAS—A few boars ready for service and guaranteed to please. Geo. V. Beckman, Lodi, Cal.

POLAND-CHINAS—60 head, bred sows and gilts. W. J. Hanna, Gilroy, Cal.

REGISTERED DUROC JERSEYS—Defender strain. Allen Thompson, Tulare, Cal.

REGISTERED POLAND-CHINA HOGS—Large and medium type. As represented or money back. W. A. Young, Lodi, Cal.

DUROC-JERSEYS — Prize-winning Boars and young stock for sale. J. K. Fraser, Denair, Cal.

DUROC-JERSEYS—Both sexes for sale. M. L. Fleming, Hanford.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in state. $30 up. M. Bassett, Hanford.

REGISTERED POLAND-CHINA HOGS—Cholera immune. W. D. Trewbitt, Hanford.

BERKSHIRES—Weanling males $10. Females, $12. J. M. Bomberger, Modesto, Cal.

POLAND-CHINAS—Prize-winners Money-makers. W. Bernstein, Hanford, Cal.

REGISTERED O. I. C. SWINE—Special sale of young sows. C. D. Conway, Lakeport, Cal.

DUROCS from first prize winners State Fair. $15.00 up. Ed. E. Johnson, Turlock, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

POLAND-CHINAS Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN, Breeder of High-Class Berkshire swine. Williams, Cal.

DUROC-JERSEY REGISTERED BOAR PIGS. H. E. Boudier, Napa, Cal.

REGISTERED POLAND-CHINAS—Large medium type. Prize winning stock. S. F. Williams, Chico.

POLAND CHINA HOGS—Registered. R. J. Miller Llewellyn Ranch, Lathrop.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

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FRANK MEACHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merino and Shropshire sheep. Stock for sale at all times.

FOR SALE—Thoroughbred yearling Toggenburg buck. W. R. Triggs, Watsonville.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

Veterinary Queries and Replies

FALLING OFF IN MILK.

[Answered by Dr. Robert Boyd, San Francisco Veterinary College.]

To the Editor: Can you give me an idea of the probable cause of the decrease in the amount of milk given by my cows, and suggest any remedy for it?

One of the cows, about six or seven years old, calved April 6, this year, and was bred about eight weeks later. She calved easily and had no trouble with caking of the udder. The calf was allowed to suck three days and then weaned. The cow was dry several weeks before calving. Immediately after calving she gave approximately seven gallons per day, maintaining that quantity for nearly two months, then gradually falling off until she is nearly dry today, giving less than a pint at each milking. The other cow calved about the first of July and has not yet been bred. She had a great deal of trouble with her udder, it caking badly. As to the amount of milk given and the management of the calf I cannot say for I was ill at the time, but I understand that she was a heavy milker. At this time she is giving about ten quarts per day. Both cows are fed the same rations, consisting of grain hay each night and morning, and green alfalfa at noon. Each morning and evening they are given a warm mash made of two parts bran and one part middlings, and about three and one-half quarts in quantity. It is mixed quite wet. In addition to this feed they receive a large amount of potato and apple parings, lettuce and cabbage leaves, beet tops and other vegetables once each day. The milking is done at regular hours, and the cows are milked clean. Each cow is curried every day, and they also have access to plenty of fresh water. Their bowels are free, and have not had the scours. Since June, the cows have been milked by four other men at different times, although I believe that they were all good milkers. Since I again took charge about three weeks ago they have continued dropping in the quantity. Both cows are fat.—E. L., Palto Alto.

[The trouble would appear to be that the cows are putting on fat instead of producing milk. From your description the cows appear to be healthy and getting a good ration for milk production. It is possible however that there may be some cause for the falling off in milk which you have not discovered, such as the cows being excited. A physical examination might also reveal something to a trained observer which has escaped your notice. I would advise you to call your nearest veterinarian.]

MAY BE FAULTY TEETH.

To the Editor: I have a horse that came from pasture a month ago in good condition and was turned in the corral with my cows on alfalfa hay. In a few days I thought she had the heaves but I find that she has the thumps and is getting poorer all of the time. What can I do for her? She is 12 years old—W. I. R., Clovis.

[This is in all probability indigestion and may be due to faulty teeth, as you say that the mare is 12 years old and some alfalfa hay is rather woody. If there is a graduate veterinarian in your district would advise having him examine the mare's mouth, but do not trust it to the "horse dentist" as many of these men do more harm than good. You might try the following tonic: bicarbonate of soda 3 ounces, powdered nux nomica 2 drachms, powdered gentian root 1 1-2 ounces, powdered anise 2 ounces. Mix and divide into six powders and give one after or in the feed twice daily. See that the mare's bowels are acting normally and allow access to salt.]

BULL OUT OF CONDITION.

To the Editor: I have a Jersey bull which can hardly walk on account of stiffness. He has a poor appetite and is in misery when moving about. He lies down most of the time. He is slightly constipated and his nose is wet. He chews his cud regularly and I have not noticed him grind his teeth. His legs seem swollen, but possibly that is due to his being so poor in flesh. He has been tied near a water trough which overflowed several times and he stood in the mire some, although he could have stood on dry soil had he cared to. Please advise me on this matter. R. A. T., Patterson.

[Give the animal a purge of two pounds epsom salts and one ounce of powdered ginger. When purge has acted give the following: tincture of iron chloride 2 ounces, tincture nux vomica 5 ounces, powdered gentian 2½ ounces, powdered ginger 4 ounces, water to one pint. Give two wineglassfuls, twice daily in one pint ale or beer, and one-half pound of molasses. If animal does not show improvement in three weeks do not continue, but write again.]

LAME COWS.

To the Editor: I have two cows that got nails in their feet recently and they are very lame. What can I do to relieve them? Is there any danger of blood poison?—W. S., Hughson.

[The hoof would require to be pared out and drainage allowed (but this should not be done except by one acquainted with the anatomy of the part), after which antiseptic packs should be applied. There is no danger of a general infection, but the most probable sequence is that if not attended to they will lose the hoofs. If there is a veterinarian in your district I would advise you to call him without delay as this condition is liable to become serious.]

WHAT CAUSES PIMPLES.

To the Editor: I wish you would describe and explain why a cow has pimples, which afterwards turns to a sort of a blood blister. Also name a cure for same. I am only a boy of 13 years of age, but I am interested greatly in cows, swine and other livestock.—F. Lyle Du Frane, Escalon.

[It would be necessary to say where the pimples to which you refer are located and any other symptoms you may notice. One disease at least which this description might suit is very serious. We are glad to hear that you take an interest in livestock.]

COWS CHEW BONES.

To the Editod: Some of my cows pick up and chew on old bones around the pasture. Do they lack anything in their feed?—E. A. S., Swanton.

[Cows are rather prone to this habit, but it may be "Pica" which is often a symptom of indigestion. How are you feeding your cows? Do you allow access to salt?]

HORSE OWNERS! USE
GOMBAULT'S
CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Do you want to breed into your herd
THE BEST HOLSTIEN BLOOD IN THE WORLD?
Our herd sire Prince Alcartra Korndyke is the best bred son of Tilly Alcartra, whose recently completed yearly official test of 30,452 pounds milk established her breeding the best in the dairy world for milk production.
We are offering for sale fine young sons of Prince Alcartra, and out of high-testing dams. These are the only grandsons of Tilly Alcartra available and this is the first opportunity California breeders have ever had of securing California-bred sires out of a world's record cow. Write us or call and see our herd.
J. S. Gibson & Co., Box 97 Williams, Cal.
"The name Gibson insures quality."

60 HEAD-- POLAND CHINA PIGS FOR SALE --60 HEAD
Both Large and Medium Type
Ready for Delivery January 15. Ten weeks to three months old. Prices reasonable and will guarantee to please or refund your money.
W. A. YOUNG, LODI, CALIF.

NEW JERSEY REGISTRATION RULES.

To the Editor: Breeders of Jersey cattle have been notified that American bred animals dropped after Oct. 24, 1914, will be registered at a fee of $1.00 to club members and $2.00 to non-members; provided the birth has been reported to the club within sixty days of dropping, and provided that the animal is not over two years old at date of application for registration.

If date of birth has not been reported, or if the animal is over two years old at date of application, the registration fee for members or non-members will be $5.00.

Blanks for reporting births are sent free on request from the Club Office.

After Oct. 24, 1914, the fee for recording transfers of ownership will be fifty cents each, if not over ninety days have elapsed since date of delivery to buyer. If more than ninety days have elapsed since delivery, the fee will be $1.00.

On and after July 25, 1914, a fee of twenty-five cents will be charged for duplicate certificates of registration and transfer.

On and after July 25, 1914, the statement "served in pasture" will not be accepted in lieu of exact date of service, unless the dates between which the cow was exposed are stated, and unless satisfactory proof is furnished that no other male except the one mentioned had access to the cow during that period.

On and after July 25, 1914, the names of registered animals may be changed on payment of a fee of $5.00; provided the name has not been printed in the herd register, that the animal has been registered within a year, that the certificate of registration is returned, and that no progeny of the animal has been recorded.

On and after July 25, 1914, no numerals in the names of animals will be allowed, except in the case of calves of the animal bearing the name used, if of the same sex, in sequence with the dates of birth.

On and after July 25, 1914, twin calves must both be registered at the same time, unless the birth is put on record within sixty days of dropping, or unless one of the twins is reported as dead.

The registration fees for animals dropped prior to Oct. 24, 1914, will be the same as those in force immediately previous to that date.

Secretary American Jersey Cattle Club, 324 West Twenty-third Street, New York.

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OAK GROVE DAIRY FARM
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Holstein Breeders
I am going to New York the latter part of December and will be present at the Dispersal Sale of the E. H. Dollar herd of 170 of the greatest Holsteins in the world. Will also attend the N. Y. Breeders' Sale Jan. 13-14. I will buy and deliver to any California breeder who wishes to take advantage of carload rates and first-cost price from the East. Correspondence solicited.
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THE CUTTER LABORATORY, Berkeley, California.

Fine Percherons for State.

[Written for PACIFIC RURAL PRESS]

It is commonly agreed that those farmers or breeders having purebred draft stallions or maresareexceedingly fortunate at this time because of the shortage which even the government admits will arise with the diminishing supply of breeding drafters in European countries now at war.

Due to the fact that the home of the Percheron horse is in the midst of the war zone and that this breed has stood higher in favor among California horse breeders than any other, as is shown by the last report of the State Agricultural Society, it is gratifying to know that the Dunham-McLaughlin Importing Company will be able to supply California farmers with a number of high-class stallions this year.

This was made possible by their having purchased a large number of stallions in France and having them delivered in America just previous to the outbreak of the war. A number of these had been put aside at their breeding establishment at Wayne, Illinois, and were being especially fitted for the International Livestock Show at Chicago, which was to have taken place the week commencing December 1.

On account of the foot-and -mouth disease, this big show was called off, and for that reason all of the Dunham-McLaughlin horses entered were shipped direct to their extensive stables at the Emeryville racetrack, Oakland, for their 1915 trade.

This consignment consists of so many animals of superior quality, size and action that no attempt will be made here to describe each individual animal. However, there are a few which are deserving of special mention.

Among them is the big iron-gray Jusque, a five-year-old who his owners had expected, would win honors at the International. He is a horse weighing around 2200 pounds; has that heavy bone and wonderful action that are so essential to the draft horse sire and is perfect in appearance. Among the three-year-olds is the stallion Lazzi, which was also especially groomed for the International. He possesses in a remarkable degree all of the size, beautiful conformation and good action for which the breed is noted, and is said to be one of the greatest individuals this company have ever handled.

There are also at least a half dozen two-year-olds weighing a ton each and the bone and size that these colts possess have seldom been seen on the Pacific Coast.

Both Mr. Dunham and Mr. McLaughlin have been consistent winners at all of the most important livestock shows held in America for the past 14 years, including the California State Fair this year, at which place they made the most remarkable winnings ever known of in this State with one breed.

At the World's Fair, Chicago, 1893, Mr. Dunham won every first prize and every championship on the Percheron stallions exhibited there.

At the Pan-American Exposition, Buffalo, 1901, William McLaughlin won every first prize in every Percheron stallion class, and every championship. At the World's Fair, St. Louis, 1904, the premier championship diploma was awarded to William McLaughlin for the best showing of Percheron horses in single animal competitions, and every first prize Percheron stallion was exhibited by him. In 1905 Wm. McLaughlin shipped two carloads of Percherons to the Lewis and Clark Exposition, Portland, where he carried off every first and every championship.

Considering their past show-ring experience, it is safe to say that the horses just brought out and which will now be sold in this State would have received their share of the awards at the International. This fact would lead us to expect that they will do much good to the horse-breeding industry of this State in future years.

A SIMPLE HOG TROUGH.

[Written for PACIFIC RURAL PRESS]

A simple and inexpensive way of making concrete hog troughs was recently seen on a ranch where everything is being built with an idea of permanency and economy.

The troughs, when finished, were six feet long and one foot wide, outside measurements, with a sufficient capacity for any ordinary pen.

The outside forms were made of rough lumber, nailed together at the ends, making a box six feet long and one foot wide. After filling this form with concrete a wooden core, five feet eight inches long and eight inches across the top is sunk into the mixture, allowing a two-inch wall along the entire top of the finished trough. This core was made by splitting a tree eight inches in diameter and cutting the ends on a bevel, which, when sunk in the cement, makes the inside of the trough sloping from all sides to the bottom.

As soon as the concrete begins to harden, the core is removed and the trough filled with water which aids in curing the concrete. After a day of two of this curing the outside forms are removed and the trough is ready for use.

WILL PUMPKIN SEEDS INJURE?

To the Editor: When feeding pumpkin seeds to dairy cows do I have to take the seeds out? I am told that those seeds dry the cow up or otherwise do injury.—A. N., Fresno.

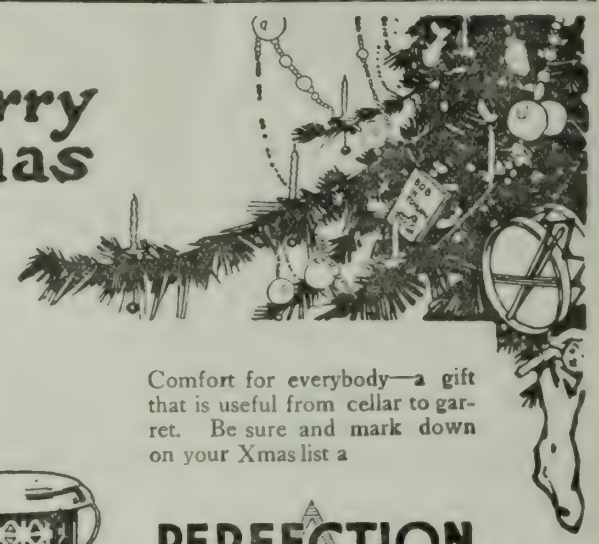
[There is a tradition among many farmers that pumpkin seeds increase the kidney excretions and should be removed before feeding. On this subject the United States Dispensatory states that the pumpkin seed is a vermifuge with no reference to any other property. The seeds contain much nutriment and should not be wasted. We believe it is entirely safe therefore for you to feed your pumpkins, seed and all; in fact we cracked up too many pumpkins for cows in our boyhood to doubt it. No one thought of removing the seed in those days.—Editor.]

Sows which have the habit of farrowing small litters or of losing a large percentage of them after farrowing, are best suited for butcher purposes. Small litters and profit do not go together.

Whole-milk calves are more rugged and develop into larger cows than those which are stunted at their early life with skim-milk and alfalfa straw. Large healthy cows are usually the highest producers.

If you haven't the need for a purebred bull, pay a reasonable service price to your neighbor who has. There is as much need for breeding to a good bull as there is to breeding a mare to a good stallion.

Merry Xmas



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Salt Lake Route
"THE WAY TO THE EAST"

Poultry for Profit

[Written for PACIFIC RURAL PRESS
By Susan Swaysgood, Pomona, Cal.]

Letting Well Enough Alone.—If your hens are doing fairly well don't go to making any radical changes. If you feel that by changing you can get better results, why change, but make the change slowly so that the hens will scarcely notice it. By doing so the change will be all right, though it may take a little longer to get results. Poultry do not like to be treated to a very radical change in either food or accommodations, though they adjust themselves better to the latter than to a change in feed.

Scratch Feed.—This is the season of the year when scratch-feed is liked better, and really gives better results than feeding all of one kind of grain. So those who have it can start by mixing in a little of the different varieties of grain. If you are feeding all wheat start in by mixing a few oats and a little kafir corn. If this is picked up clean add a little shell, bone, rolled or whole barley or any feed that may be on hand with the mixed grain, and during cold weather is better for the egg basket, but if the hens don't clean up every bit of grain there is no use in wasting it. Getting them interested outdoors scratching for grain that has been raked in the ground is a good way to increase circulation, and good circulation carries blood to the egg organs and starts the hens singing. When the hens are idle is a pretty good time to "not let well enough alone." It is a good time to invent some new scheme to interest them, and hens are like humans in that—once they get interested, they work better.

All over the State are complaints that the pullets have failed to produce the goods this year.. Even many pullets that were hatched in March have not commenced to lay yet, and most of those who complain say that they fed barley.

One-Sided Ration.—Now barley is a good grain, but it can be fed so long that chickens get poor. Barley is a muscle-grower, oats is a bone food and it is also fattening. If the hull is taken from oats the grain itself is almost as fattening as corn, though very few people think of oats being in the fattening class. It is the fibre or hull that forces the grain to build bone rather than fat. Barley, on the other hand, is a slow fattener, but it is a strong feed and if helped along with kafir corn or wheat it should produce eggs and in pullets too, but we must not expect the impossible. Give the hens a variety, not just one thing at a time. I have seen people who fed nothing but wheat, and wheat is one of the best balanced grains we have. There is less fibre to it and more of the elements for egg-making than any other one food, but it is not enough of a variety to make hens lay in winter.

Egg Prices.—Contrary to expectations, the price of eggs has not soared very high, and perhaps that is a place where it is best to "let well enough alone," at any rate the price does not prohibit the majority of people from eating eggs, many of whom would have to go without if the price went much higher. What we have to do is coax biddy to lay a few extras, and it can be done. The farmer has much better opportunity to do the coaxing than the ordinary poultryman. The farmer has range, and no matter how bare it looks the hen will forage something. Around the barn and outbuildings, through the orchard or alfalfa field, picking up a little of one kind, then of another, all of which helps in the egg basket, costing the farmer little or nothing, but just a little time and forethought.

Duckology.—A short time ago we cautioned readers to get their breeding ducks in shape for laying. Now December is here and they should soon be mated up. It is always better to be a little before time than a little behind. Never go out to the ducks with a lantern at night. It is sure to upset the ducks equanimity and almost make a stampede. Don't get them too fat before they commence to lay, it is not conducive to fertile eggs. If you are fattening for table do not allow water to bathe in, as that keeps flesh down. The same rule applies to geese; water-fowls rarely get too fat when allowed plenty of water for bathing.

Famous English Poultry Farms Enter Panama-Pacific Egg-Laying Contest.—Entries for the International egg-laying contest have been received from Mr. Edward Cam, of Houghton, England, and from Utility Poultry Farms of Haighton, Ribbleton, Preston, England, also from Frank Toulmin of Ingel Lanes, England. So we may expect to see some good layers at the Panama Fair. So far Tom Barron has been able to put one over on all of us in the United States, and if the rest of the Britishers do us up we shall have to go over there and play spy on their systems.

Discrimination Against Bantams.—The poultry press all over the United States is taking up the cause of the bantams at the Panama Exposition. For some reason the bantams are being grossly ignored at this big show and everybody naturally feels that it is not right. Bantams are not only pets, but they furnish many a business man and suburbanite with both pleasure, exercise and eggs. But that is neither here nor there. What is hurting is the fact that the entry fee is the same for all big birds and little ones clothed in feathers; the big fellow who captures a blue ribbon gets $5 prize money and the little fellow $2.50, while the entry fee on a pen is $4, and the premium the same. Now we all hope that this has just been a mistake, and that Mr. Lively will see that in this State alone the bantam is recognized as being worthy of a place in what we hope will be the largest exposition of good poultry the world has seen. Bantams do not require as large pens as the large size poultry; they do not eat as much, and if they pay equal entry fees, they surely ought to share equally whatever is given in money or cups. As a bantam breeder, I protest against such discrimination. Make things equal and give us a chance to show our beautiful pets in numbers. Competition is what makes a good show, but there must be something more than glory to compete for these days. Glory does not fill the flour-barrel, and a breeder of bantams can't afford to pay $1.50 entry fee on a small bird, unless in a co-operative way, for another breeder to get the full prize money if he fails to win.

CHICKEN TAPE WORMS.

To the Editor: Enclosed is a flat white worm nearly two inches long of which I find some in the droppings of my 6 months chickens.—H. H. J., Cupertino.

[It is a tapeworm and won't hurt the chickens except by stealing their food. Feed the chickens all the chopped garlic and pumpkin seeds they will eat after letting them fast 24 hours. Garlic fed once a week is a good preventive.—California Poultry Practice.

Chopped garlic bulbs clean intestinal worms out quickly except in serious cases, when a vermifuge is necessary. Garlic tops are not so dependable because not so strong, but usually clean out incipient infections if fed once in two weeks or a month. Garlic taints the eggs of some hens more than others and should be fed only for worms. Chopped or ground pumpkin seed are best for tape worms.—Geo. H. Croley.]

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STARTING IN CHICKENS.

[Written for PACIFIC RURAL PRESS By Henry W. Lehmann, Napa.]

Whenever city people of moderate means get the back-to-the-land fever, it seems the most natural thing in the world to say: "We'll start in the chicken business!" How many of them actually succeed, is best witnessed by these monuments of their failure—the small abandoned chicken plants that you can find nearly everwhere in this State.

It was under influence of some of the books which promised fortunes in chickens that I started a few years ago gradually to throw off the yoke of the industrial slave (?) (at about $5 per diem) and embarked upon the beckoning smiling sea of chickendom.

A good thing for me that my start was gradual, for before many moons I found myself wrecked on the hidden reefs of this apparently sure-to-win game, among breakers rough enough to capsize a seagull, and an undertow so strong that it sucked the dollars out of my pocketbook faster than I could put them in; and this, in spite of all the books I could scrape together.

But like all mortals of average intelligence who stick with a thing, I learned a trick or two, as the saying goes; and by keeping my weather-eye open, I can now navigate my little canoe fairly well; and make chickens pay me enough profit so that I prefer to stay in the chicken business rather than follow my profession.

Poor Vitality Cause of Failure.—It is my honest conviction that nearly 95 per cent of all the failures are caused by weak, debilitated stock. I want to emphasize this and let it soak into your cranium, until it's all absorbed, that you will not get very many eggs, unless you have strong, healthy stock; and that you'll not have very good chicks unless you have eggs with strong, natural vitality, no matter how good you care for your stock or eggs.

This seems to be the stumbling block over which all beginners fall; they can't get good stock, and don't know good stock when they see it; a chicken is a chicken to them, and worst of all, when they do see a chicken that does not look quite as it should they can't bring themselves to the point of getting rid of it, so they keep perhaps over half drones, chickens that don't lay enough to pay taxes on them. Unmerciful culling is the only method that will keep a flock profitable; and the proper culling has to be gained by experience; it is hard to learn in any other way.

As a general rule keep no fowls that are droopy, have a small, bluish black comb, or show any signs of not being in the best of health; keep a continual watch on your flock. You'll soon get familiar with the earmarks of a good healthy chicken, and that means nearly always a good layer.

Cull When Maturing.—But the best and only reliable time to cull is when the birds are maturing. It is during this time that, to a trained eye, they show their strength and vigor as plainly as the thermometer the temperature.

If chicks from good stock, properly incubated and brooded, are culled as soon as the sex can be plainly told, and nothing but the best developed, most feminine looking pullets are selected and properly kept after that, you will have a flock of chickens that will prove profitable when they mature.

Nearly always an early maturing is a good laying bird; it shows that it is capable of consuming and assimilating a great amount of food, with special emphasis on the assimilation; for the greater the percentage of the total nutriments furnished which is assimilated, the greater must be the strength and vigor of that specimen, and the greater consequently its value. It is not the food a fowl eats but what its digestive organs assimilate, that counts.

The difference in this respect among birds is sometimes remarkable; the quickest maturing and finest broilers I ever raised received the least food of any, likewise I have noticed little chicks, smaller than the rest, who would consume more feed, judged by comparing their crops, than the others, but wouldn't grow as rapidly, showing that but a small percentage of the food consumed was assimilated.

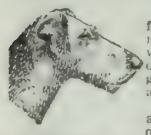
By working along these lines you cannot help but be successful; if feeding, housing, care, etc., is favorable; but it will be immediately apparent that you must raise your own stock and that it will take time to get started.

PASADENA SHOW.

In writing of the poultry show held last week at Pasadena, Mrs. Swaysgood says: "The show here is well attended and everything is fine. This is a high-class show and to make a win here means something, for really all of the birds are of very high quality.

"Due to the fact that white fowls are handicapped two points by the Standard of Perfection I was just half a point from winning the $10 cup for best or highest scoring pen in English class. But it is all fair and we have no kick coming."

Breed AIREDALES For Profit



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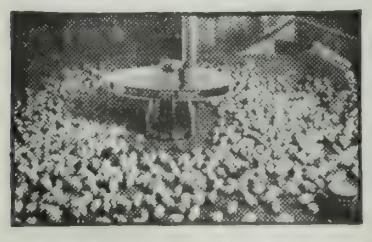

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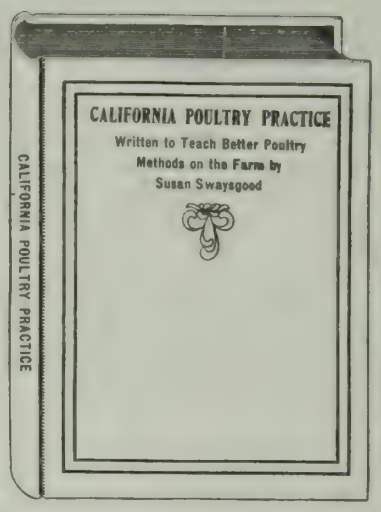

BY

SUSAN SWAYSGOOD

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30 The Mediterranean Class.
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33 The Asiatic Class.

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Pacific Rural Press

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San Francisco

AVERAGE PRICE OF EGGS DESIRED.

[Written for PACIFIC RURAL PRESS By Geo. H. Croley.]

The egg market reports of Dec. 1, 1914, for both San Francisco and Los Angeles are no doubt viewed by the majority of poultrymen with disappointment and alarm, particularly because last year prices on this date were much higher, as shown by the following comparison condensed from the report of the San Francisco Wholesale Dairy Produce Exchange.

Dec. 1, 1914—Extras 45c.; Selected pullets 32 1-2c.; Storage Extras 27 1-2c. against same date a year ago of 52c., 49c. and 35c., respectively.

We want to say something to take the sting out of the disappointment and encourage those who see nothing but approaching disaster in this great difference in prices.

We believe the one great cause of the very low prices during the period of heavy laying is the comparatively high prices during the fall months. As prices advance, particularly after the city consumer is compelled to pay more than fifty cents for choice fresh eggs, the demand for eggs generally among all classes except the very well to do, falls off with a thud. Housewives dig up every recipe possible that religiously eliminates eggs, and the result—it at once becomes a set and established rule of that household to avoid even the mention of eggs at meal times.

Then when the supply suddenly increases these same housewives and households neglect to change; they pay little or no attention to the decline in prices until there is a great accumulation on the market and everyone with eggs to sell gets busy trying to unload. Each holder works overtime reducing the price to induce the housewife to change her system and again make eggs a staple article of diet.

It is our contention that if prices in the fall, which is the period of low production, could be kept nearer to an average yearly price the public woud consume more eggs per year, become better acquainted with the value of properly handled storage eggs, and this would ultimately result in a higher average yearly return to the producer for his crop of eggs.

THE MODESTO POULTRY SHOW.

[Written for PACIFIC RURAL PRESS by James Yates of Modesto.]

Up to December 5, Modesto has just held next to the largest poultry show in the State this year and while interest in this show has been on the increase since its founding, the number of entries this year surpassed all former attempts.

I have attended six shows this season and must say that the Auditorium where the show is always held has the neatest appearance of any I have seen, with the aid of the uniform cooping, made possible by the association owning their own cops.

Birds were there from all over the State, the strongest classes being white Rocks with 65 entries, barred Rocks with 60, R. I. Reds with 70, white Leghorns with 65 and black Minorcas with 65. In single comb black Minorcas there were seven exhibitors, and when the smoke cleared away it was found that F. H. Green had secured 1st on cock, J. D. Yates 1st on hen, A. C. Masteller 1st on pullet, J. R. Baker 1st on cockerel and J. W. Benoit 1st on pen. Other varieties were well filled and competition was keen. One exhibitor said that it was the strongest class of white Leghorns seen this season at any of the shows.

The judging was done by the score card system by Judges N. W. Kauble, James D. Yates and F. L. Weston. The size of the show was most too large for the score card system making awards up later.

The weight clause was used as it should be in a score card show and many specimens were cut for weight.

The highest scoring specimen was the black Orpington hen shown by Chas. Holman of Stockton, which scored 95¼.

A. D. Marshall of Fresno exhibited a good string of white Orpingtons, also winning several firsts in Flemish Giant and New Zealand Red rabbits. He made excellent winnings amidst strong competition.

ADVERTISING AT SHOWS.

[Written for PACIFIC RURAL PRESS]

The San Francisco Poultry and Pet Stock Show is now on. Its first day's atendance was double that of last year. It spreads comfortably over a large area and the classy birds and pet stock look comfortable and contented. We take this opportunity to call attention to the value of letting the show-seeing world know who is producing the good stuff. The entry tickets are of some importance that way. Some pens display printed cards 8 x 12—a neat size and conspicuous. Others have saved money on printing by having attractively hand-printed cards large enough to read at a distance. Such a card calls attention and invites inspection. Several little wire racks hung to the front of the coops of one exhibit present a supply of business cards, for the interested one to stick in his pocket for reference. Business farmers are these, whether they sell stock or eggs or both. It pays to advertise.

SALT FOR CHICKEN FLEAS.

To the Editor: Will you kindly inform me what to do to eliminte, or better still, to prevent the accumulation of fleas on young chicks' heads? I find that after birds are about ten weeks old they are not afflicted to the same extent as before that time, when the plague seems to be pretty bad.—F. H. L., Naranjo.

[From California Poultry Practice.]

[Whatever kills mites will kill fleas, but some things will kill fleas that will not kill mites. Salt spray is good for fleas but not very effective for mites. Mix one gallon of salt with four gallons of water and spray the ground where the fleas are thickest. Do this a few times and the fleas will all be dead.]

WHITE ROCKS IN STANISLAUS.

To the Editor: The competition in the White Plymouth Rock variety was very keen. Our cock bird heading the first prize pen was the largest white Plymouth Rock in the show, weighing 10½ pounds. We have one of the largest flocks of White Rocks in Stanislaus County.—Mrs. J. B. Tupper, Ceres.

Turkeys Wanted

Our sales on Poultry for the month of November were $64,386.85. All this business came to us on a CONSIGNMENT BASIS. Is there ANY GOOD REASON why we can't handle your TURKEY SHIPMENTS?

Certainly you are interested in getting GOOD PRICES. Our large poultry trade needs TURKEYS EVERY DAY in the week. Therefore we solicit your REGULAR WEEKLY SHIPMENTS.

We remit EACH WEEK at ACTUAL SALES less 8 per cent commission.

We will give $50.00 in prizes to the poultry raisers guessing nearest the amount of our sales for the month of December; $15.00, first nearest guess; $10.00, second nearest; $5.00 each next five nearest guesses. The names of winners will be given in this paper after January 1st, 1915.

Write us stating number turkeys you have for shipment now or for Christmas market.

HARBAUGH & COMPANY

238-242 Davis St., San Francisco, Cal.

Mention this paper when writing or sending your guess.

BABY CHICKS

Standard Bred.

The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price list and pamphlet free upon request. Now booking orders for Fall and Spring delivery.

THOMAS HATCHERY, Petaluma, Cal., Route C.

Poultry Breeder's Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

TO THE POULTRY FARMER—We now have under construction a modern Hatchery, and are booking orders for BABY CHICKS from our heavy laying strains of S. C. White Leghorns and White Plymouth Rocks. We solicit your order for 1915 delivery, and know that you will be well pleased with the high quality of our stock. Write for prices on Sept. and Oct. hatched pullets, and year-old hens for breeders. Hopland Stock Farm, Hopland.

S. C. WHITE LEGHORN BABY CHICKS—from my pure-bred flock S. C. White Leghorns, carefully selected for laying and standard qualities, $9.00 per 100, $85.00 per 1000. A first-class chick at a reasonable price. Eggs for hatching, $5.00 per 100, $45.00 per 1000. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal., San Luis Obispo Co.

MACFARLANE STRAIN White Leghorn Eggs. $5.00 per 100, chicks Jan., Feb., $12.00; afterward $10.00. Order now, any quantity Cockerels, $2.00; White Rock eggs, chicks, cockerels. Write for prices. Big plant, best stock, lowest pices. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. N. B., See article about us by Prof. Adams, U. C., in October "Poultrycraft."

MAMMOTH BRONZE TURKEYS—Large reductions offerred on old stock for short time only. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

ORDER NOW—Thoroughbred Bronze Turkeys from largest Turkey Ranch in Stanislaus county. Large Spring gobblers and hens for breeding stock. Address, Crow's Landing Turkey Ranch, Crow's Landing,, Cal., Box 227.

HICKS JUBILEE HATCHERY—36,000 capacity this season. Now booking orders. White Leghorns and Black Minorcas our specialty. Instructions in caring for young chicks free. W. J. Hicks, R. 2, Petaluma, Cal.

OUR SPECIAL White Leghorn Chicks are well hatched and strong, from healthy, vigorous breeding stock. Book your order now for coming season. San Jose Hatchery, 373 Meridian Rad, San Jose.

PETALUMA HATCHERY—Established 1902. Do not compare our prices with others; compare quality; the best are the cheapest in the end. Send for circular. L. W. Clark, Petaluma, Calif.

STERLING FARM-INCUBATOR CHICKS and Hatching eggs from fully matured S. C. White Leghorns, Wychoff strain. Also S. C. Brown Leghorns, Route 2, Box 1416, Sacramento, Cal.

PINE TREE POULTRY FARM, Los Gatos, Cal.—Hatching eggs from S. C. White Leghorns. Selected stock. $6 per 100; $50 per 1000. Order now. No baby chix

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 398, Los Gatos Cal

MAMMOTH BRONZE TURKEYS—Strong, vigorous, well-marked Toms and Hens from the best blood of prize-winning and utility stock. Prices reasonable. Geo. A. Smith, Corcoran, Cal.

MULICK'S MAMMOTH BRONZE TURKEYS.. 1st State Fair, Petaluma, Stockton, Sacramento, Willows. Young stock for sale. N. E. Mulick, Willows, Cal.

PHEASANTS—Ringneck and Golden. Ready for breeding pen. Eggs in season. T. D. Morris, Agua Caliente, Calif.

DAY-OLD CHICKS—WHITE LEGHORNS. Good stock. Selected for seven years. Circular free. H. A. Schlotthauer, Exeter, Cal.

WHITE ROCKS—BABY CHICKS. Booking orders now for Fall or Spring delivery. Mrs. J. B. Tupper, Ceres, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House. 229-231 So. Los Angeles St., Los Angeles, Cal.

TOULOUSE GEESE—direct from Philadelphia. Win everywhere. Prize Rhode Island Reds. M. F. Giddings, 245 Tokay St., Lodi, Cal.

BARRED ROCKS—Cockerels, Pullets, Eggs. Winners of two specials, two firsts and one second Stockton show. G. H. Grupie, R. 3, Stockton.

TRAPNESTED LEGHORNS, White and Buff Stock, eggs, chicks. Arthur R. Schroeder, Box 179R, Mountain View, Cal.

TRAP-NESTED—Eggs from hens with seasonal lay of 20 to 27 eggs per month. R. W. Stratton, Calistoga, Calif.

FOR SALE—S. C. Black Minorca, Buff Orpington and Rhode Island Red Cockerels. R. A. Holdridge, Box 282, Dixon, Cal.

MARCH HATCH MAMMOTH Bronze Toms. 25 lbs. Prize-winnng stock, $750. Jesse Kimball, Farmington, Cal.

HAYWARD HATCHERY—Booking orders for Fall and Spring day-old chicks. S. C. White Leghorn specialty. Free price list. Box 688, Hayward, California.

DAY OLD CHICKS—Hoganized Egg Machines. We are booking orders for spring delivery. Hans F. Mortensen, Suisun, Cal.

THOROUGHBRED SINGLE COMB WHITE LEGHORNS—breeding and foundation stock eggs for hatching. Rancho Del Martino, Mrs. E. B. Martin, Downey, Cal.

STAWETSKI'S White Wyandottes and Indian Runner Ducks. Winners Oakland, San Jose. Stock, eggs. R. W. Stawetski, San Jose, Cal., R. 2.

PIGEONS—Largest breeders in the West. 12,000 to select from and for free catalog. King Lofts, Box 685, Hayward, Cal.

INCUBATOR CHICKS—White Rocks and White Leghorns. High class stock. Send for booklet of prices. Mahajo Farm, Box 597, Sacramento, Calif.

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DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, $7.50 per 15; utility, $2 per 15; $10 per 100. C. J. Struby, Concord, Cal.

PREMIUM STRAIN—Barred Rocks are the best for quality and utility. Stock for sale. Orders booked for eggs. Folder free. Pyke & Davis, Oroville, Cal.

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FINE BARRED ROCK COCKERELS for sale for $3.00 each. G. L. Hawley, Madera, Cal.

ORPINGTONS—BUFF AND WHITE—Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

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The Home Circle

FOR EVERY DAY.

God, make my life a little light,
Within the world to glow,
A little flame that burneth bright,
Wherever I may go.

God, make my life a little flower
That giveth joy to all;
Content to bloom in native bower,
Although the place be small.

God, make my life a little staff
Whereon the weak may rest,
That so what health and strength I have
May serve my neighbor best.
—Mrs. B. M. Edwards.

THE KEEPSAKE.

Little Grandma in her afternoon sprigged muslin, very short as to waist and very scant as to skirt, sat in a high-backed, splint-bottomed chair, knitting desperately.

She knit to the middle of her needles. Then she rolled her ball of gray yarn up hard and stuck the needles into it.

"Mother," she said eagerly to Great-grandmamma, "now may I make a cat?"

"What?" exclaimed startled Great-grandmamma, stopping the spinning wheel in her surprise.

"Out of cloth," explained little Grandma.

"Oh!" said Great-grandmamma, starting the wheel again and stepping back and forth, back and forth, with the yarn she was spinning to make more gray stockings.

"For a pen-wiper," went on little Grandma above the whirr of the wheel. "May I have a piece of the best broadcloth for it?"

"Have you knit your stent?" questioned Great-grandmamma.

"Yes," said little Grandma, hardly able to keep her ankle-ties still, she was so anxious to go.

"I've knit six times round the stocking." That was her "stent" every afternoon before she could play.

"Then you may," smiled Great-grandmamma, and little Grandma jumped excitedly to her feet, spilling the astonished Mr. Wiggins unceremoniously out of her lap to the floor, where he dexterously alighted on his feet, and danced off in search of Great-uncle.

Great-uncle was writing at the secretary. Little Grandma waited, with what patience she could, for him to finish and fold the big blue sheet and seal it on the back with red wax.

"Oh, will you please draw me a cat?" she asked then.

He pinched her flushed cheek gently.

"All right!" he laughed. "How will you have him?"

She considered. "Lying down, all stretched out in the sun, the way Mr. Wiggins likes to," she concluded.

So he drew a cat that way, with little Grandma hanging happily over his shoulder.

He was old,—oh, twice as old as she!—and to-morrow he was going away to college. How she was going to miss this big brother! She had hemmed his handkerchiefs, and helped on the fine shirts, and knit a pair of stockings; but she wanted to give him something all herself. That was what the pen-wiper was for.

"I guess," she said at last, speaking as steadily as she was able, "you will miss Mr. Wiggins when you are gone to college.

"I guess I shall," he answered, sharpening his goose-quill pen. "I guess, too, I shall miss somebody besides Mr. Wiggins!"

At that a lurking tear would come out, and, when she had winked it away, the cat was done. Then drawing in her hand, up the winding stair she flew to the attic, silent and dim and fragrant with bundles of herbs hanging from its rafters,—thoroughwort and pennyroyal for medicine, sage for the Thanksgiving turkey, caraway seed for cookies.

She threw open the lid of the great square chest in the dormer window, tossed aside the sprigs of cedar scattered in to keep away moths, and took out the roll of fine broadcloth left from Great-uncle's new suit that the tailoress had just made.

Dropping on the floor in the light of the dormer window, under its arch fringed with drying herbs, she deftly cut out the picture of the cat on the paper.

Then she pinned this paper pattern smoothly on a piece of broadcloth, and cut a cloth cat by it. Snip, snip, went her sharp scissors, pointing the black ears, rounding the paws and the tip of the tail. And there lay a miniature Mr. Wiggins on her lap!

Then she cut out several more of him.

"Now," she said, "I must make your whiskers!" And with white silk from her reticule she embroidered his whiskers.

She found two gleaming pearl buttons in her button bag, and sewed his eyes on tight. Last of all, she securely fastened, underneath, the unwhiskered and eyeless copies of Mr. Wiggins to wipe the pen on.

A few minutes later a flying figure precipitated itself upon Great-uncle. "Here is a Mr. Wiggins to go to college with you!" cried little Grandma, putting the pen-wiper in his hand.

He was just as pleased with it as she had hoped he would be.

"It is a beautiful cat! I shall keep it always, to remember you by. It is a keepsake," he said. "And Mr. Wiggins and I will write you lots of letters," he assured her.

So Great-uncle packed the pen-wiper in his carpet-bag, and next morning the stage-coach and its four horses galloped a hundred miles away with him and Mr. Wiggins to college.

Now Mr. Wiggins is an old, old cat,—more than sixty years old. His white whiskers are a bit yellowed with time, and his black coat not quite so glossy; but his pearl button eyes are as bright, and he is as useful as ever. And many a letter does he still help write, for Great-uncle kept him always, just as he said he would.—Alice M. Farrington, in Little Folks.

ENTIRELY TOO OLD.

Wife—"Any fashions in that paper, Jack?"

Jack (who has just settled a dressmaker's bill)—"Yes; but they're no use to you, dear. It's yesterday's paper!"—London Opinion.

"Father says if you came to-night I must not see you."

"He means I should put out the light."—Life.

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A person, well, sick or convalescent, can drink Ghirardelli's Ground Chocolate when other beverages would be out of the question. Tell the grocer to send you a can today. Serve it for tomorrow's breakfast, and note how pleased the family will be and how much more vim than ordinary they'll have to begin the day's work. Very economical.

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DISRESPECT FOR AUTHORITY.

There is no tendency in this country today which portends greater menace to American institutions than the growing disrespect for authority. the lower grades of the Grammar Schools to the classrooms of the university, the boy or girl chafes under authority. Teachers and principals are openly blamed for imposing discipline as though they had no right to do it, and not infrequently a chit of a boy or girl defies the teacher in the presence of an entire class. And instead of the others disapproving the guilty one waxes in popularity. Radical newspapers attack the courts as though the men on the bench were a set of ignoramuses without authority or responsibility. These press reflections are picked up by cheap demagogues on the rostrum and flourished with abandon almost startling in its brazenness. Thus is the security of life and property loosened if not menaced, for if our courts are not respected how can their judgments have weight?

Parents no longer control the goings and comings of their children, and as a result old-fashioned parental respect is almost a lost virtue. No other abuse contributes so largely to the increase of business in our Juvenile Courts. Little girls and boys rush off alone and unchaperoned to class parties and entertainments, remaining until late in the night and starting home either alone or in the company perhaps of a strange escort. Superiors in positions of trust are treated with familiarity by those under them, destroying all semblance of authority in the conduct of business institutions. All along the line the tendency to disrespect authority is rampant.

We repeat that the remedy for this dangerous state of things lies chiefly in the home, and secondarily in the schoolroom. The boy who respects his parents will respect his teacher, and respecting his teacher he will respect all others in high place. Inculcate in him an appreciation of his own place in the world and an understanding of his relations to those older than himself, and you will have gone far toward making him a good citizen.—San Jose Mercury.

EAT COOKED APPLES.

Apples are so plentiful at this season and make so universal an appeal to the housewife both as to price and value in the diet that these recipes are most timely.

The following recipes are furnished by Miss Cora E. Binzel of the Home Economics Department of Wisconsin College of Agriulcture:

Apple Sauce Cake.—(Eggless—milkless). 1 cup apple sauce, sweetened, 1 cup sugar, 1-2 cup shortening, 1 teaspoon cinnamon, 1-2 teaspoon cloves, 1-8 teaspoon salt, one cup raisins, 1 teaspoon soda, 2 1-2 cups or more flour. Mix as for butter cake.

Apple Shortcake. —2 cups flour, 1-2 teaspoon salt, 4 teaspoons baking powder, 1 tablespoon sugar, 1-2 cup shortening. Mix as for baking powder biscuits. Fill the pie plate with sliced apples, cover with the crust. Bake until the apples are tender and the crust is thoroughly baked. Turn on a plate, dot with butter, sprinkle with sugar and cinnamon. Serve with or without cream.

Fried Bacon and Apples.—Place the bacon on the rack in a dripping pan. The pan should have enough water in it to cover the bottom. Place in a hot oven, cook until the bacon is brown and crisp. Slice cored, unpared apples. Heat the bacon drippings in a pan, lay in the apples, sprinkle with sugar, and cook in the oven until brown. Serve the bacon on a platter surrounded with apples.

Apple Whip.—1 cup sweetened apple sauce, whites of 3 eggs, 3 tablespoons powdered sugar, 1-4 teaspoon baking powder, juice and rind stiff, add sugar and baking powder. Cut and fold in the apple sauce mixed with the lemon. Turn into a buttered dish, set the dish in a pan of water, and bake in a slow oven until firm to the touch.

Steamed Apples.—Pare and partly core apples. Do not remove the blossom end. Place the apples in a steamer and fill with butter, sugar and cinnamon; sugar, cinnamon, and lemon; or candied sugar. Serve with meringue or whipped cream.

HANDKERCHIEFS FOR CHRISTMAS.

Here is an idea for the woman with many Christmas gifts to make. A dainty handkerchief edge with the added advantage of quickness of execution—an item of importance as holiday time draws nearer—can be made this way:

Roll a small hem and, using mercerized embroidery cotton in some attractive color, overcast around the hem first in one direction and then in the other. The threads will then be crossed, giving a pretty effect with very little work. The stitches should be from 1-8 to 3-16 of an inch apart.

A thread may be pulled about an inch from the edge and a colored thread run in if desired. The line of color inside the overcasting makes a very attractive handkerchief. But if this thread is to be run in it should be done before the hem is put in.—Annabell Turner.

MENTAL GEOGRAPHY.

The most populous country is Oblivion. Many go there, but few return.

The largest river is Time.

The deepest ocean is Death.

The region where no living thing hath habitation is called Yesterday.

The most highly civilized country is To-day.

The highest mountain is called Success. Few reach the top save those who watch sharply for the passing of the spirit of the mountain, Opportunity, who carries upward all those that seize hold upon him.

The region where no man hath ever set foot is called To-morrow.

The greatest desert is called Life, and it hath many oases. These are called Hope, and Ambition, and Love, and Charity, and Home. And of them the last is the most beautiful. Besides these are many others, smaller in extent, whence the traveler obtaineth refreshment during the weary journey through Life.

Mabel—"He seems awfully green for a college graduate."

Maud—"It was an agricultural college."—Judge.

HOUSEHOLD HINTS.

Fruit jars of three sizes for pantry shelves not only look neat, but also serve to show the busy housewife at a glance just what each contains. This is also much more sanitary than storing food material in paper sacks and boxes.

In the largest size, standing in the back row, keep brown sugar, rice, tea, etc.; use the medium sized jars for raisins, currants, beans, etc. The smallest size may be used for spices, baking powder, soda, etc. Have the jars neatly labeled and brush over labels with shellac or white of egg. Jelly tumblers may be used for the spices.

MODERN MATRIMONY.

Madge—"When I get married I wouldn't think of leaving my husband alone in the city all summer."

Marjorie—"You'd better not tell him that before you're married."—Puck.

Synonymous.

Tommy Figgjam — Paw, doesn't "reverse" mean to "back?"

Paw Figgjam—Surely.

Tommy Figgjam—Then what did Uncle Bill mean when he said that he busted up in business because he had too many reverses and not enough backing?—Chicago Post.

ON THE SUMMER BOARDING HOUSE PIAZZA.

"Billson, yonder, tells me he trusts his wife implicity, absolutely, but"—

"Well?"

"Well, I notice he carries his change and his fishhooks in the same pocket."—Judge.

The Youngs unexpectedly dropped in on the Baileys for dinner, and Mrs. Bailey explained privately to little Helen that there would not be enough oysters, "so you and I will just have some broth and say nothing." Little Helen promised to remember, but when she discovered a small oyster in her plate, she could not recall her instructions. She dipped up the oyster, and holding it well in view, she piped out, "Mother, mother, shouldn't Mrs. Young have this oyster too?"

Two little boys witnessed a balloon ascension for the first time recently. "Oh, look, look there!" exclaimed the youngest. "What is that?"

"It's a b'loon!" replied the elder.

"What makes it go so fast?"

"Gas."

"What is gas?"

"Why, gas is—is—is melted wind!"

Little Bertha asked for a pickle at dinner. Although warned that it was very sour, she ate it hastily. The result was that she puckered up her mouth and exclaimed: "Doodness! 'At pickle made my mouth feel offul small! Can you hear my talkin?"—Ohio State Journal.

Sincere Wishes. — Jones: "I'm quite a near neighbor of yours now, Mrs. Golightly. I've taken a house on the river." Mrs. G.: "Oh! Well, I hope you'll drop in some day."—Exchange.

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AND PACIFIC COAST

Nature's Exposition

AND

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Mariposa Big Tree Grove
Lake Tahoe and Sierra Region
Kings and Kern River Canyons
Lake County Resorts and Springs
Paso Robles Hot Springs, Santa Barbara and Coast Country
Los Angeles and Its Beaches
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Imperial and Coachella Valleys
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Klamath and Crater Lakes
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The Markets.

San Francisco, Dec. 9, 1914.

Unless otherwise noted prices are f. o. b. San Francisco.

WHEAT.

The wheat market is again on the up-grade, with the English market higher and country stocks in the north firmly held, and the local market has responded with a sharp advance.

Cal. Club, Ctl.	$2.00@2.02½
Forty-fold	2.00@2.05
Northern Club	2.00@2.02½
Northern Blue'm	2.15@2.25
Northern Red	2.00@2.20

BARLEY.

While speculative business is quiet buyers are taking more interest in the spot grain, causing a further advance in brewing and shipping grades. Feed is firm but unchanged.

Brewing & Shipp'ng	1.25 @1.27½
Choice Feed, per ctl.	1.17½@1.22½

OATS.

Values are quite steadily held, but local buyers are taking but little interest at present, and this market is rather dull.

Red feed	1.45@1.50
Seed	1.65@1.90
Gray	Nominal
White	1.55@1.60
Black Seed	1.75@2.25

CORN.

Eastern Yellow continues decidedly easy, with large supplies offered for shipment. Stocks here are moderate, but ample for the demand. Egyptian white is steady as before, with a fair demand. Some brown is offered at lower prices, but the quantity is negligible.

California Yellow	Nominal
Eastern Yellow	$1.75@1.80
Egyptian White	1.60@1.70
Milo Maize	1.65@1.70

BEANS.

The bean market is now getting down to the usual quiet condition that accompanies the holiday season, though the demand has so far been fully up to expectations. Considering general conditions, there has been a very satisfactory movement during the fall, and the outlook for spring is very encouraging. Holders are accordingly taking a firm attitude, keeping prices well up to the former level. Prices for limas for eastern shipment have been steadily advancing, and while local dealers have not changed their figures lately, it is understood that most of the stock in the country is held for an advance.

(On Wharf.)

Bayos: Cal. per ctl.	$4.50@4.75
Blackeyes	3.75@3.85
Cranberry Beans	3.65@3.75
Horse Beans	3.50@3.75
Small Whites	3.90@4.00
Large White	3.75@3.90
Pink	3.00@3.10
Limas	5.15@5.25
Red Kidneys	5.00@5.10
Mexican Red	4.75@5.00

SEEDS.

Considerable inquiry for alfalfa is reported, but there is plenty on hand and values show no change. Other descriptions are quiet at the former figures.

Alfalfa	16 @17 c
Brown Mustard, per lb	Nominal
Canary	10 @12½c
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c

HAY.

The recent rain has greatly improved the prospect for the coming crop, and has a tendency to cause further weakness in the market, as many holders are endeavoring to dispose of stock they had been holding back, and it is very difficult to find buyers. A further increase in offerings is expected, and there is not much prospect of a better market. The hay was well out of the fields before the rain began. Current arrivals have been lighter, but still consist mainly of poor hay, and the demand is very light. Alfalfa also finds a limited demand, though offerings are lighter than they have been.

No. 1 Wheat	$9.00@11.00
do No. 2	6.00@ 8.50
Barley	5.00@ 7.50
Tame Oats	6.00@12.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.00
Stock Hay	4.50@ 5.00
Straw, per bale	40@ 45c

FEEDSTUFFS.

The improved grass prospects in the country tend to curtail the demand somewhat, though the movement so far has been fair. The only quotable change is on cracked corn, which shows a further decline in sympathy with eastern conditions.

Alfalfa-Molasses Meal, per ton	$19.00@20.00
Alfalfa Meal, per ton.	14.00@15.00
Bran, per ton	26.00@28.00
Oilcake Meal	37.00@38.00
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	39.00@40.00
Middlings	33.00@34.00
Rolled Barley	25.00@26.00
Rolled Oats	32.00@33.00
Shorts	29.00@30.00

VEGETABLES.

The call for vegetables shows little improvement, though lighter offerings have brought advances in some lines. Tomatoes from nearby points are still offered in considerable quantity, and find a moderate sale at last week's figures. Green peppers are quite firm, with supplies coming mostly from the South. All lines of beets show a wider range, with an advance in first-class stock. Eggplant and cream squash have stiffened up a little, and cucumbers have advanced sharply, with diminishing supplies. Southern lettuce and Palo Alto celery are lower, and the sprouts also show a slight decline.

Peppers, Bell, lb.	4@ 6c
Chili, lb.	3@ 6c
Carorts, per sack	30@ 40c
Tomatoes, lugs	40@ 75c
Beans: Wax per lb	3@ 8c
String	3@ 8c
Lima	5@ 9c
Cucumbers, lugs	1.25@ 1.50
Eggplant, lb.	3½@ 6c
Cream Squash, box	35@ 40c
Celery, doz	10@ 20c
do crate	1.00@ 1.25
Sprouts, lb	3@ 5c
Lettuce, crate, Southern	50@ 75c

POTATOES AND ONIONS.

Oregon as well as California onions are going east through the canal, and this movement has stiffened the local market materially, bringing a sharp advance. The current prices are leading to an effort to market the Lompoc crop, which are still in the ground, though some stock there has already been damaged by rain. Potatoes are also getting into better shape, with an advance on river stock.

Potatoes: Salinas, ctl	$1.40@ 1.50
River Burbanks, ctl.	90c@ 1.15
Sweet Potatoes, ctl	1.35@ 1.50
Onions: Yellow, sack.	1.00@ 1.25
Garlic, per lb	10@ 12½c

POULTRY.

Offerings this week show a further increase, both from eastern and nearby points. The stock is not cleaning up very rapidly, and the market is easier, though without quotable decline. Offerings of dressed turkeys are large, causing a slight drop in prices. Geese are slightly higher.

Turkeys, lb.	20 @22 c
do,	25 @27 c
Large Broilers	20 @22 c
Small broilers, per lb.	25 @28 c
Fryers	19 @20 c
Hens, extra, per lb	17 @18 c
Hens, extra, per lb	17 @18 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb.	17 @18 c
Squabs, per doz	2.00@3.00
Geese, per pair	2.50@3.00
Ducks, doz	$5.00@9.00

BUTTER.

Another large lot of "kangaroo" butter came in a few days ago, but local offerings have been considerably lighter, and values show a gradual recovery from last week's decline, though the gain is unimportant.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	29	29	31	31½	31
Prime	27	27	27	27	28	28
Firsts	26	26	26	26	26	26

EGGS.

There was quite an accumulation a few days ago, and extras went down to 38c., pullets' also declined slightly. Since then the market has picked up a little. The demand is turning more to pullets and storage stock, values for which are considerably higher.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	42½	38	39½	40	40	41½
Sel. Pul.	32½	30½	32	36	34	36

CHEESE.

Flats have gained ½c. this week, Y. A.'s showing a similar decline. Monterey cheese is higher, with little coming in.

Fancy California Flats, per lb.	13½c
New Young American fancy	15 c
Monterey Cheese	15½@16½c

Los Angeles dairy prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Butter	30	30	30	30	30	30
Eggs	40	38	37	39	39	40
Cal. Chees	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

The market is still narrowing down, apples being the only description offered in large quantity. The low rate east through the canal offers some slight relief in this line, but with heavy accumulations in all producing markets, prices show no improvement. The local demand is only moderate, and supplies are still piling up. The casaba crop is about all in, and this fruit will probably be cut out of the market in another week. Grapes are higher, with gradually diminishing supplies, though the demand is limited. There has been some shipping demand for persimmons, causing a little firmer feeling on good stock. Cranberries are a little firmer, with a better demand.

Cranberries	$7.50@8.00
Huckleberries, lb	5@ 7c
Apples, Newtown Pippin	50@ 75c
Bellefloweres	65@ 75c
Baldwin	65@ 75c
Xmas Apples	1.00@1.50
Persimmons, box	40@ 85c
Casabas, doz	30@ 60c
Grapes: crate	50@1.00

DRIED FRUITS.

With the near aproach of the holidays, the recent activity in dried fruits is less in evidence; but there has been a very fair movement, considering the general situation, and the views of holders have been somewhat strengthened. Local interests express little doubt that most of the California product will be required before the next crop comes in, and feel that values should at least be maintained on about the present level. Apples, of course, are hard to move as stocks are large in all producing districts. Apricots are pretty well out of growers' hands and there is a steady, though limited demand at steady prices. The demand for peaches has fallen off again, but holders feel more encouragement. Many scattering holdings of prunes have been absorbed at the figures quoted, and there is still some inquiry. It is believed that there is now very little left in the country. Raisins find a moderate but steady demand, with assurance that values will be maintained until spring. The New York Journal of Commerce says: The primary market for California prunes is strong. It is said by prominent operators that anything that could be bought on less than a 6c f. o. b. four-size bulk basis has been absorbed. Some recent offerings were put up here on a 5¾ @ 5⅞c f. o. b. bulk basis and were promptly absorbed, but no transactions of consequence on the higher basis are reported. The offerings at present consist chiefly of 40s, 50s and 60s, with the larger size being most in evidence, but even these are less freely offered from the Coast. California apricots and peaches are slow of sale for forward shipment from the Coast, but offerings from primary sources are light and the tone of the market is firm. In most lines of California fruits spot goods are going steadily into consumption on the basis of previous quotations. Buying for the most part is on the hand-to-mouth order. Holders, however, are not trying to force sales. California raisins of the different varieties are going steadily into consumption at the quoted prices. The market is steady. Outside offerings are understood to be well cleaned up and the Associated Company, having guaranteed its prices to April 1st, will make no concession from quoted figures.

Evap. Apples, 1914	4@5 c
Apricots, 1914	6 @9c
Figs: White, 1914	4 c
Black	2½@2¾c
Calimyrna, 1914	5 c
Prunes, 4-size basis, '14.	5¾@6 c
Peaches, new	c 3¼@3¾
Pears	6 @8 c
Raisins (in sweatbox):	
Loose Muscatels c	4 @4½
Seedless Sultanas	5 c

CITRUS FRUITS.

The eastern auctions are taking all of the California navels as fast as they arrive at good prices, though lemons are lower in price. Valencias seem to have been entirely cleaned up and only this year's navels are being offered. Shipments from Tulare and Butte counties are now going forward at the rate of about 150 cars daily. This fruit arrives in good condition and is sought for by the trade.

On the eastern auctions, Monday, Dec. 7th, navels averaged from $2.55 to $3.25 per box and lemons from $2 to $3.25. If the early districts can get most of their oranges to market for the holiday trade at the present prices, the growers will have cause for congratulations.

While the demand at San Fancisco is gradually picking up, it has not kept pace with arrivals of new navels, which are considerably lower. The inside figure on tangerines has also dropped. Lemons are steady as before, while lemonettes have declined.

Oranges: Navel, box	$1.75@2.25
Valencias, box	2.25@3.25
Tangerines, small box	1.50@2.25
Grapefruit, seedless, box	1.75@2.50
Lemons, box	1.75@4.00
Lemonettes, box	75@1.25

NUTS.

The nut market is in rather unsettled condition, with many scattered lots coming out, and nobody willing to buy at Association prices. Almonds are especially hard to sell, and some offerings of drakes are held at about 8c with 5c as the best offer so far received. Some business in No. 1 softshell walnuts is reported at about 16c, and according to New York reports some have been offered for shipment as low as 15c.

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas, Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
Budded	18 c
No. 2	12 c

HONEY

The market remains stagnant, with large offerings, and very little demand here. Most of the stock is being held at the quoted figures, but is not moving. Some speculators are offering at 3⅞c for light amber extracted, but holders are not satisfied with this figure.

Water White, comb	10 @12 c
Light Amber	8 @ 9 c
Water White, extracted	6½@ 7 c
Light Amber	5 @ 5½c
Dark	3½c

HOPS

Quite a lively business is reported in Oregon, and there have also been a good many sales in Sonoma and Mendocino. Prices remain low, and are apparently attractive to buyers.

1914 crop	6¼@10 c

LIVE STOCK.

Cattle and beef are moving in a rather limited way at present. Calves are scarce and firm, and sheep are offered sparingly in the country, with considerable inquiry. Lambs also are scarce, and prices tend upward. Hogs hold fairly steady, but supplies are ample for all requirements.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	6 @6½c
No. 2	5½@ 5¾c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½@ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
200 to 300 lbs	7 c
100 to 225 lbs	7½c
Prime Wethers	6¼@6½c
Ewes	5¼@ 5¾c
Milk Lambs	7 @ 7½c

HORSES.

Little new stock is coming into the city market this week, and the only notable feature is a sale of trotting stock across the Bay. Recent offerings have been about all the market locally would easily absorb, as ordinary stock finds very little demand, and the usual buyers of drafters show little interest. Buyers for Europe are reported at several Valley points, but it is understood that their purchases have not amounted to much, and their operations have certainly had no perceptible effect on this market as yet.

Heavy drafters, 1700 ibs. and over	$225 @ 275
Light Dra's, 1500 to 1650	200 @ 215
Chunks, 1350 to 1500	180 @ 200
Wagon Horses, 1250 to 1350	125 @ 175
Green Mountain Range	60 @ 1.00
Delivery Horses, 1050 to 1250	100 @ 110

DRESSED MEATS.

Steers	10¾ lb @ 11½c
Heifers	10½ @ 11 c
Veal, large	13½ @ 14 c
Small	15 @ 15½c
Mutton. Wethers	11½ @ 12½c
Ewes	11 @ 11½c
Suckling Lambs	13½ lb 14 c
Dressed Hogs	12½ @ 13½c

Publisher's Department

A new book by the American Book Company, 100 Washington Square, New York, has just reached this office, entitled "Agricultural Education for Teachers," written by G. A. Bricker, of the Ohio State University. This book is primarily for teachers, to aid them in preparing themselves to teach agriculture in the schools. At this time such books are needed and the price of 80 cents is low enough to put in the reach of all teachers.

Our new book, "California Poultry Practice," is meeting with a good reception from the poultrymen of the State. Orders for the book as well as kind words are being received at this office every day. The book should have a very large sale because of its merit and the need of the information that it contains. The price of $1 is so low that everyone can afford a copy.

The work of getting out the newest book, "California Garden-Flowers, Trees, Shrubs and Vines," is progressing nicely. Over half of the copy is in the hands of the printers and Prof. Wickson is rapidly finishing the balance. Engravings are being made, the paper is on hand and the cloth covers are being put together. Before January 1st we think the book will be ready for the trade. Prof. Wickson is writing a great book and every purchaser will be more than pleased when reading it.

A NEW WAY TO BUILD A HOME.

A new system of building houses has come into vogue. Usually in the past a prospective home builder has engaged an architect and called for bids for the building of their home. The Ready Built House Co., of Portland, Oregon, has an improvement over this method. They sell a house "knocked down" complete in every detail, with every part numbered to correspond to the plans that accompany the material. Hence it is easily possible ofr anyone to build their own home. It is evident, therefore that quite a substantial saving can be effected. Consider the difference in the cost of a home built is easily possible for any one to build by anyone under the plan of the Ready Built House Co. In fact the company has gone still further, and are ready to formulate home plans with the ideas of the prospective home builders incorporated in them. Under this method one can buy a complete 3 room house for as low as $194, and a five room house for $281. A prospective home builder will do well to at least send for one of the handsome catalogues, which are free for the asking, before going ahead and building under the old method.

SHALL IT BE "UNCLE SAM," OR "DADDY SAM?"

To the Editor: Sunday is a good day to think of ways to give or get for the other fellow half the road, and a square deal. I write to you because I read and enjoy all of your Pacific Rural Press weekly issues.

Old Age Insurance.—For some years I have been considering if it would not be the next best bet for the United States, after rural mail, parcels post, better banking, etc., for our government to tax every man in proportion to his income, just a small sum monthly, and let him pay it at the post office. Have experts figure the proper sum per $1,000 income to tax each man. Let them receive in time of need sums in proportion to size of their payments.

Create old age and disability pensions something after the plan of the same in Europe. Some State and some publication of influence must work out and be father to this idea. Why not a good job, among many other good jobs you have done with the Pacific Rural Press, and why not give California the credit of being the State to start the plan, if the whole United States hesitates to try it out?

This is not a letter for publication, or to blow my own horn.

It is hell on earth to see so many more or less good men down and out all over the United States every time we have a panic, and at other times. If all men, when earning, were compelled to pay to the United States a small sum weekly, or monthly, they would do it gladly in consideration of the right to draw on the United States as those who are more fortunate can draw on the banks when they need money.

I carry for our ranch help, State Compensation Insurance, and every employer should. I am not a Socialist, nor a member of any other party. I vote as I think is right. Am not going as far as Bellamy did in "Looking Backward" — great book, that it is. But endless suffering, much crime, and expense can be saved by the United States acting as father, or banker, and helping those who will not, or can not, provide for their own future. Make all of us do it, every man in the United States.

I have studied this plan enough to know that there are abuses in Europe, and any place where old age or disability money is paid by the government or even by fraternal organizations. A large per cent of the members of various lodges in the United States join because of some financial benefit they get, or expect to get. I believe in fraternity among people of similar tastes, and ideas, but much of the present day lodge fraternity in the United States is a clumsy and rather poor working machine. OLD SUBSCRIBER.

Chico.

[These are good propositions to be thinking about. We are drifting fast into some form of paternalism in government, and although we have not learned to love them yet, we man be bitten by that bug later.—Editor.]

"Who can describe a caterpillar?" asked the teacher. "I can, teacher," shouted Tommy. "Well, Tommy, what is it?" "An upholstered worm." —Our Animals.

DECIDUOUS VARIETIES.

The fact that a fruit is demanded in the market does not prove it should be planted. Its bearing qualities and the amount already raised are as important in deciding what to plant.

More than four times as many Bartletts were shipped from California this year as of all other varieties together up to date. Varieties of which over 16,000 boxes were shipped, are in the order named below, from greatest down. Bartlett Clairgeau, Hardy, Comice and Duchess.

Santa Clara valley raises late pears such as Comice to ship across the water and makes good money at it. They also hit the holiday trade in the East.

Lake county Bartletts ripen so late, not having been irrigated, that they do not meet the competition of the main crop.

In shipping plums the Tragedy leads. Other varieties popular on the market are Gros, Giant, Grand Duke, Diamond, Climax, and Wickson. Clyman and Red June are well liked because they are early and stand shipment well. Because fruit sells on appearance, Burbank is not so popular and brings a low price, though it has a never failing crop. Italian leads in the northwest and is popular partly because of its black or purple color.

Grape shipments continue East, mostly Tokays and Emperors. Malagas are next in popularity. The East wants grapes they can see through. J. L. Nagle of the California Fruit Exchange says that Emperors in the north San Joaquin are black and opaque, even if the cuttings be taken from the same vine whose cuttings yield red Emperors in the south San Joaquin. Mr. Virden has observed that rain doesn't hurt Emperors so badly as Tokays and Malagas. Cornichon sells well in limited quantities, but the demand for Black Prince is slipping backward.

According to J. E. Green of the Frost Prevention Co., Roque River Valley Bartletts come later than California pears and are profitable, but apple growers are vainly trying to sell at 20 cents f. o. b.

Mr. Nagle adds Utah, Colorado, Michigan and Connecticut to the sections whose peaches compete with our Salways and others. Our Picquet's Late and Hull's Late fill a gap ten days earlier, but the demand for them is limited because grapes are then coming. The Northwest is pulling out peaches; it is only a question of time till they will all be gone, but British Columbia is planting heavily. There will be more room there for our peaches for a few years probably. Several districts in California are pulling out of shipping peaches. Much of the valley soil raises heavier crops than the granite foothills, but the latter produce hardier fruit for shipment. In working out of Salways, Mr. Nagle believes plums would be better than other varieties of peaches, and blue plums are most demanded on the markets. Diamond is good if you are willing to let it ripen thoroughly, otherwise it is bitter and discourages plum eating. It has heavy bloom on the fruit like Grand Duke. The bloom, especially on grapes and plums, is an important aid in creating demand. It is not so necessary on apples and pears. Blue color in plums makes the bloom show more noticeably.

Mr. Nagle advises a succession of good varieties for the whole season because there never is a year when the markets are always low. Fruit out of season, especially peaches and plums, are heard to sell.

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SAN FRANCISCO, OAKLAND, ANTIOCH & EASTERN RY.

TUBERCULOSIS WAR.

"'Why didn't the doctor tell me?'" is one of the most pitiful questions which the tuberculosis physician has to meet," says Dr. H. W. Hill, of the Minnesota Public Health Association. "It comes so often, too, from men and women who have been ailing for three or four years, have taken treatment for various diseases, but never seriously insisted on having an examination which would have shown that they had tuberculosis. Then, when the disease is far advanced they come to the man whose specialty it is to discover tuberculosis if it exists, and it is often too late to effect a cure. It is rare, indeed, that it is not too late to save the other members of the family from infection.

"This is one of the conditions which the Minnesota Public Association hopes to remedy through the funds received from Red Cross Christmas seals this year. If each one does his little share for the sake of the sufferers these cases which have not yet been discovered and which are now existing in open menace to the entire community, will be sought out and placed in sanatoria and their families examined and protected.

A steamer load of materials and exhibits from Australia and New Zealand has arrived on the grounds of the Panama-Pacific International Exposition. There are 78 tons in the shipment. The greater part of it was for the New Zealand pavilion. The consignment for the Australian pavilion consists of 200 beautiful specimens of tree ferns, which will surround the structure.

Give the sow a good dry farrowing pen, the floor of which has been covered with straw, and the sow will be better contented. Also will kill fewer pigs by rolling on them.

AMERICA'S LEADING

HORSE IMPORTERS

Wayne, Illinois **DUNHAM-M'LAUGHLIN,** **Oakland, Calif.**

PERCHERON HORSES

All the **PRIZE-WINNING PERCHERONS** that we exhibited at the recent **CALIFORNIA STATE FAIR** have been sold. That consignment of stallions included **EVERY FIRST-PRIZE-WINNER IN EVERY OPEN CLASS; ALSO EVERY CHAMPION.**

WE HAVE JUST RECEIVED TWO CAR LOADS OF PERCHERONS from our farm in Illinois, which we have been saving and conditioning for the great **INTERNATIONAL LIVE STOCK EXPOSITION, CHICAGO.** This extraordinary lot of stallions represent **MORE WEIGHT, MORE BONE and BETTER INDIVIDUALS** than have ever before been shipped to the Pacific Coast.

OF SPECIAL MENTION in this consignment are three two-year-olds, weight over a **TON** each, selected from the farms of the **BEST BREEDERS OF FRANCE** before any of the other American Importers arrived there, namely: **"MARGIO," "MERCURE"** and **"MAKO."** Among the three-year-olds is the black **"LAZZI,"** weighing well over a **TON,** and pronounced by experts in France as the **GREATEST THREE-YEAR-OLD THAT EVER LEFT THAT COUNTRY.** Topping the list is the iron-grey **"JUSQUE,"** five years old, weighing upwards of **TWENTY-TWO HUNDRED POUNDS —a horse of rarest FINISH, and MOST SENSATIONAL ACTION.**

We Also Have Some Extraordinary American Bred Percherons

FOUR PRIZE WINNERS
OAKLAND, CAL.

Breeders who are fortunate enough to secure any one of the stallions of our late shipment will be practically assured of securing **PREMIER HONORS,** in their respective classes, if the individuals are exhibited at the **PANAMA-PACIFIC EXPOSITION, 1915.**

THE BUSINESS OF DUNHAMS WAS ESTABLISHED IN 1866

Our **Mr. WILLIAM McLAUGHLIN** was connected with McLaughlin Bros. from 1893 to 1908. **BETWEEN THEM, DUNHAM and McLAUGHLIN HAVE IMPORTED AND SOLD MORE PRIZE-WINNING PERCHERONS THAN ALL THE OTHER FIRMS IN AMERICA COMBINED. THIS IS A MATTER OF RECORD. THE UNPRECEDENTED SUCCESS OF OUR BUSINESS IS DUE TO THE SUPERIOR QUALITY OF OUR STOCK; CAREFUL, CONSERVATIVE MANAGEMENT, AND THE PERFECT FULFILLMENT OF OBLIGATIONS.**

Below are a few of our satisfied customers who purchased of us since the State Fair, Last September.

Perry and Peter Anderson, Rio Vista, Cal., **LUCON,** 1st Prize 3-year-old and Grand Champion, State Fair; Wm. and Otto W. Clark, Petrolia, Cal., **LAPON,** two-year-old; J. A. Franklin, Dunham, Cal., **JASEUR;** M. Simpson, Academy, Cal., **MAJEUR,** 1st Prize two-year-old; J. L. & T. A. Kilkenny, Dixon, Cal.; **MAIRAN;** R. M. Digges, King City, Cal., **MARLOT;** McGrath Estate, Oxnard, Cal., **MARS;** Koopman Bros., Pleasanton, Cal., **MAYAN;** Jos. Avilla, Vallejo, Cal., **KRURAL,** 1st Prize four-year-old, State Fair.

DUNHAM-McLAUGHLIN COMPANY

Western Stables, Emeryville Race Track, Oakland, Cal.

Vol. LXXXVIII—25 Forty-Fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, December 19, 1914 LOS ANGELES

State Library 7-1-16

Rice As California Knows It.

[Written for PACIFIC RURAL PRESS]

If one were to ask the average man in the Sacramento valley what farm crop has had the most spectacular growth in the last four years, the unhesitating reply nine times out of ten would be "rice."

Wateribune, a Japanese Rice.

In fact, the optimist has such a big lead over the pessimist on this subject of rice in that part of the State, that one can scarcely keep track of the increase in acreage from one year to the next, so fast does it grow.

Of course, rice is being seriously considered in other parts of the State, and well it might be, too, judging from the reported yields secured on lands of little worth for other crops in the San Joaquin valley, but after all one has to visit the section where rice first offered the booster a chance, in order to secure experiences that really count most to the prospective purchaser of rice land or to the man who would grow rice on land already owned.

As a foodstuff rice ranks ahead of all other cereal crops in that it serves as the principal food for a larger number of people in this world than any other, and statistics show that the amount consumed per capita in the United States has been continually on the increase, even though approximately 37,000,000 pounds had to be imported in 1909. Our own annual production in this country at that time was only 668,901 pounds of cleaned rice, which would seem to prove pretty conclusively that there is no chance of overdoing rice in so far as finding a market is concerned.

As is the case with most of our farm products, California's distance from eastern markets might be somewhat of a barrier in that rice-growers in the Southern States could more cheaply transport their product to market, but the facilities now afforded water carriers through the completion of the Panama canal has made it possible to ship rice from San Francisco to New York for 40 cents a hundred against 38 cents a hundred from points in the Southern States to New York, thereby overcoming any apprehension in that direction.

While it has been estimated that there are 150,000 acres of land suitable to rice culture in two counties of the Sacramento valley, conservative estimates based on the amount of water available at the present time are that not more than 50,000 acres of land in the entire valley are irrigable from gravity irrigation systems. The possibility of pump irrigation is not figured into the above estimate, however, and that may prove to be a factor worth while in the future.

The acreage in the San Joaquin valley for which water may be supplied is an uncertain quantity at this time, due to the comparative newness of the industry in that section, which has not allowed of testing out the different localities as to adaptability. Experience so far shows, however, that rice can be grown in locations which were not thought possible at first, and that, too, under pump irrigation.

So far as present experience is concerned, and according to one of the best-informed growers in the State at this time, the ideal land for rice culture is that having a top layer of three or four inches of sediment soil and underlaid with adobe.

It has been commonly supposed by many in the past that good rice land should be underlaid with hardpan in order that the water might be more easily retained. It now develops that such is not the case, but it is necessary that the land be retentive of water and for that reason the clay types of soil are preferable.

Rice in Sacramento County.

Such soils are usually the most difficult to handle in preparing them for seed, whether it be rice or other crops, but the theory ad-

(Continued on page 630.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

ONE DOLLAR PER YEAR IN ADVANCE

ENTERED AT S. F. POSTOFFICE AS SECOND-CLASS MAIL MATTER

Address all communications and make checks or money orders payable to
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Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., December 15, 1914.

Stations.	Rainfall Data			Temperature Data Past Week	
	Past Week	Seasonal to Date	Normal to Date	Max'm	Min'm
Eureka....	2 60	14.68	13.07	54o	34o
Red Bluff...	2.38	7.28	7.62	50	28
Sacramento.	.86	2 92	5.07	52	32
S. Francisco.	1.74	4.22	5.68	56	42
San Jose....	1.24	4.10	4 24	56	30
Fresno.....	.62	1.59	2.65	60	30
Indep'nd'nce	.12	.52	2.56	46	12
S. L. Obispo.	1.58	3.85	4.45	58	36
Los Angeles.	.84	2.15	3.29	64	40
San Diego..	.46	3.07	1.97	64	40

The Week.

The rains have reached good working measure, as shown by the Weather Report above, and all that we anticipated in the way of field activity in seeding and soil-turning for later planting is being realized. This will give a new push, no doubt, to city trade, and stimulate Christmas shopping also, although it is a singular fact that Californians' pursuit of holiday merchandise seems to be but lightly conditioned upon general trade and crop conditions. My lord may be on the street scowling fiercely with his friends over the tightness of the times while, on the other side of the plate glass, my lady is keeping a bunch of salesmen busy showing fabrics and foibles of which she takes armsful to fill her gift-list. And then perhaps the old man, having nearly twisted his face off over the financial situation, will don a smile, walk a block in heavenly anticipation, and buy a limousine for his wife. This matter of hard times is doubtless, as President Wilson said, largely psychological. It has always reminded us of the old lady who was always lamenting her sinfulness—loudly calling upon the Lord to witness that she was probably the worst sinner since the publican entered the temple. When one of her friends, wearying of the harangue, expressed sorrow that she was so wicked, she quickly retorted: "Well, I don't think I'm any worse than you are!" And so it is with the hard times: hard enough surely, until you wish to do something soft yourself, and then how the money does fly! And it is mighty fortunate that Christmas softens us all up a little.

A Good National Christmas Condition.

And yet, there are plenty of good hard reasons why Americans should be active and contented. It does not help the poor sufferers abroad to mope. We can help them most by being confident and energetic, and if we are not we cannot do what they have reason to expect of us. That one year of the war in Europe will add $500,000,000 to the foreign commerce of the United States is the estimate of Edward E. Pratt, chief of the Bureau of Foreign and Domestic Commerce, who has just completed a study of reports of American consuls and commercial representatives abroad. If the ratio of increase recorded since August, when the war began, is maintained until next August, he estimates that new orders placed on the books of American firms will total half a billion dollars. In reaching his estimate on the estimated grand total Mr. Pratt took into consideration the enormous increase in European bound food supplies noted in September and October, but the increase in manufactured articles is greater. Mr. Pratt says that in one item alone, that of working tool of all kinds, manufacturing companies have from $10,000,000 to $15,000,000 in new orders from European countries now on their books. One big plant has enough work ahead of it to keep it in full operation twenty-four hours a day for the next two years. And so it seems to be in all great producing lines, and this means that all American workers will be busy and home trade in food products will be brisk. Every one will be able to buy the high-class and more costly special products which California sends forth. Why, then, worry? If every one loosens up there will be nothing tight. It is now the psychological moment to do it.

Germany Will Be a Good Buyer.

For all goods not contraband of war, and only a few are contraband, we shall have a good trade even with beleaguered Germany. The cable says that Copenhagen is full of German merchants, salesmen, and others, intent upon doing business with the neutral world, especially the United States. The American consul-general, Mr. Winslow, is doing his utmost to assist the exporters of America in the sale of their commodities. Exporters should bear in mind, said Winslow, that only necessities can be sold to Europe at the present time and no experiments will be made by Danish importers. Grain, cotton, flour, provisions, footwear, clothing, canned goods, metals, and all raw material will have the call. Surely a diet of California dried peaches will help the German people discharge their heavy burden, and then our peach-sick producers will see our prophecy of December 5 on its way toward realization.

How to Get to Germany in German Ships.

Will it not jar the world to see the German ships flying the United States flag? It really does look as though Uncle Sam could rule the seas in a commercial way, if he is only up to his chances, and it adds to the dramatic interest of it to know that a woman is a leader of the affair. The story comes from New York that for the last two weeks a young German woman, Bertha von Kessler, private secretary and confidential adviser of Friedrich Ballin, German steamship magnate, has been in New York paving the way for negotiations which will begin with the arrival of Herr Ballin. Since the beginning of the war the Hamburg-American line and the North German Lloyd, which practically constitute Germany's mercantile marine, have been losing at the rate of $250,000 a day. Herr Ballin proposes to lease all the German vessels to an American company for a number of years, at the end of which they are to revert to their original owners. This would give America a chance to build a merchant fleet, which would be ready for use at the termination of the lease of the German boats.

And so it may come to be that these popular ocean liners, having for decades transported in their state-rooms American "peaches" in quest of foreign titles, will now carry California peaches for a more broadly humane purpose.

The Essence of Rural Credits.

Phases of the broad rural credit question are likely to crop out on any page of this journal, for the farming population is beginning to take part in the discussion and to have ideas on the subject. The Grange order is taking it up seriously, and all other agricultural organizations should follow suit. It is really a simple matter in its main purpose, although it has ramifications and touches development, colonization, etc. It should be simple also in its methods, although it naturally crosses a number of fences and hedges which the financial fraternity has fixed up for people to run between. Take first the general purpose, and to define that we run no chance of launching heterodoxy if we choose the words of a man eminent in finance and corporate interests, W. C. Brown, former president of the New York Central Railroad, and now an Iowa farmer. At the Farmers' Congress last week he said: "The establishment of farm credits is one of the most important questions now before the Nation. The farmer is now paying twice the interest he should. Long time loans at a low rate would enable the farmer to properly finance his work, and it is this financing upon which depends to large degree the future prosperity of the country."

Mr. Brown also said that farmers will approve the position on the question taken by President Wilson. The President's position is described in the official forecast of his message as follows: "He will urge the passage of a rural credits bill, whereby the farmers of the country will be enabled to assist themselves in financing their crops. He will not suggest direct government aid of any sort, but merely will ask that the national government afford an instrumentality whereby farmers may be enabled to avail themselves of benefits similar to those which businessmen generally expect from the operations of the Federal Reserve banks."

That is a discriminating utterance. It does not say that the Reserve banks will be open to farmers' transactions just as it does to commercial transactions, although that is true. It is true: but it does not go far enough. Farmers are not used to dealing with banks as merchants do. They do not have the same facility in stacking up collateral. A few of them can deal with a Reserve bank through existing local banks just as merchants do, but the mass cannot. President Wilson says there should be an instrumentality by which farmers can have benefits similar to those which business men expect. That is the root of the matter: now watch what will sprout from it!

The Attitude of the Secretary of Agriculture.

The attitude of Secretary Houston of the Department of Agriculture and a member of the president's cabinet is naturally taken by the

press as foreshadowing the President's attitude also—and, in a way, the policy of the administration. The telegraph brings an outline of the Secretary's report in which he is said to point out that the new bank law "takes just and particular knowledge of the farmers' requirements." He suggests that any credit needs of the agricultural community beyond those cared for under the Federal Reserve law, should be cared for by a system of "co-operative credit associations," financed with private funds, by means of which the combined credit of farming communities could be utilized, and by a system of land mortgage banks, likewise privately capitalized. This must mean that if farmers need fairer financing and lower interest they must get it for themselves or from their old friends, the present banking institutions—for nothing but a bank can get at a Reserve bank. Getting it for themselves may mean that they may organize banks of their own and thus get in on the ground floor of the Reserve bank, just as other banks do. We will not argue about that now—just wait and see if it that which will sprout in Washington.

But Secretary Houston has convictions on the quality of American farmers. The fragment of his report which comes over the wires has this: "There seems to be no emergency which requires or justifies government assistance to the farmers directly through the use of the government's cash or the government's credit. The American farmer is sturdy, self-reliant and independent. He is not in the condition of serfdom or semi-serfdom, in which were the European peoples for whom government aid was extended in some form or other during the last century."

That is all right as a patriotic sentiment, but what has it always cost, and what does it cost now? According to ex-President Brown, as quoted in the preceding paragraph, farmers have walked up to the onyx counter and paid twice as much for money as others have. As long as they continue to be "sturdy, self-reliant and independent" enough to do that, why should the American nation worry? There are reasons enough why the nation should worry—enough to fill this page. But one will do now, and that is this: agricultural production cannot endure, under present conditions, if it has to pay twice as much for the capital needed to make a product as the merchant pays for the capital needed to handle it: it cannot endure if it pays from as much as twice to three times as much for having it pushed over the onyx to him as the real owner of the money gets for the use of it.

There is too much onyx in American banking. Money will slide over a board in America just as it does in Europe. American farmers may have to establish that fact for themselves and not be aided to do it by patriotism, philanthropy and altruism to such an extent as it has been done in Europe, as Secretary Houston suggests, but one thing is sure. Something will drop in the agriculture of "my own United States" if the farmer has to run along under the "hind ex" of the financial chariot much longer.

But this, he does not propose to do. Already a committee, appointed by those most interested in farming, is preparing plans for the united influence of agriculturists to remodel laws now pending in Congress, so farmers may have adequate banking privileges comparable to those of business men.

Queries and Replies

Querists must give name and address.

Why Not Credits for Existing Farmers?

To the Editor: I note articles in last issue of Rural Press regarding "Rural Farm Credits," in connection with colonizing large tracts of land and selling to farmers on long time at low interest. This should be very desirable if properly worked out; but why cannot it be made also to include those who already have the land, but lack sufficient capital to develop it and get started? Farms of this class would be more scattered and not all in a bunch together, but otherwise could, I believe, be included, and it would be a great benefit to a large number in all of the newer sections. This class of farmers should certainly be entitled to at least as much consideration as Belgians, or Easterners, or Californians who do not at present live on or own land.—T. J. True, Lancaster.

That is true and that is a point which we always have in view in discussing the subject. Naturally, the making of a lot of new farmers has more dramatic interest and appeals to consumers, economists and politicians who are now carrying most of the rural credit propaganda for generally patriotic purposes. Unless the real existing farmers, who wish capital at fair rates, get together and work for it, they are surely very apt to be overlooked. Discuss it, organize to secure it, and then go to it in season and out of season If farmers do not do this they are not very likely to get anything.

Corn Smut.

To the Editor: My corn has considerable smut in and I would like to know the cause and how to prevent it. It was planted between the 1st and 10th of May on creek overflow land and given the usual cultivation.—C. A. V., Forestville.

Corn smut is not often seriously abundant in this State. Even in States where most corn is grown, nothing is usually done for it except to cut out and burn the stalks seen to be affected before the black powder has a chance to burst out and fly around. Such stalks should not be fed to stock nor allowed to lie around and ripen their spores.

Japan Clover.

To the Editor: I wish to know about Japan clover, or Lespedeza. Is it grown anywhere in California, and what is the food value compared to alfalfa? Will stock eat it as well as alfalfa when dry? Is it suitable for land in the foothills, without irrigation?—W. A. S., Berry Creek.

It is an annual which will not grow in most California places in the rainy season, because it is tender against frost. It will not grow much during our dry summer because it does not like drouth. It is of no use without irrigation, and if one has water he can grow alfalfa, which is vastly superior, because it makes several times as much growth and because it does not need to be seeded every year. Bur clover is worth more to us than Japan clover because it grows in the winter and seeds itself. Japan clover was tried in California thirty-five years ago and pronounced of no account for us. In the Southern States, with summer rains, it is well thought of.

Laying Out for Almonds and Small Fruits.

To the Editor: I have some six acres of land in this vicinity which I expect to plant to almonds mostly. The land is what is known locally as Vaquero loam, with gentle slopes but somewhat rolling contours. As I wish to get the best results possible from this acreage, would like to plant on the hexagonal system. Is there any objection to using this system instead of the square system on rolling land, and would not the hexagonal system give greater yields from this acreage than if planted any other way? If trees were planted about 30 feet apart on the hexagonal plan, how long could one grow berries between the rows before the ground would be needed for the trees; or could not the berries be grown indefinitely provided sufficient fertilizer was supplied to provide the needs of both trees and berries?—A. H. W., Templeton.

We would prefer laying out in squares, especially on uneven ground, because it gives wider areas for working, although it does not favor working in so many directions. We would welcome discussion on the results of wider experience by our readers. We have never seen demonstration that the few more trees in the hexagonal planting made the acre yield greater, Perhaps readers have facts on this point also. Until corrected we shall say that the theoretical advantages of actually equal division of the land and the consequent setting of a few more trees, is either not realized or is counter-balanced by the greater inconvenience in working. As for the trees getting the use of all the land we have no doubt they do that, even if the roots have to go a little farther for it. Inter-planting is surely more easily managed by the square system and it carries the advantage of working in several directions, whatever that advantage may be. If you are to run your almond planting by rainfall we would not try to grow berries: first, because you would not get many berries, other than blackberries, and second, you could not cultivate as you should for maximum moisture conservation for the sake of the trees. You could, of course, make up for the plant-food taken by the berries by using fertilizers, but fertilizers avail nothing unless the trees have water enough. This remark is made because you do not say anything about irrigation. It is not merely the moisture the berries would take, but also what they would cause you to lose.

Disinfecting Tree Holes.

To the Editor: I have blown out about 40 stunted Bartlett pears which seem to have been affected with crown gall or some other fungus as the roots and stumps were badly decayed. I desire to replant with Gravenstein apples. Can you advise me how to disinfect the holes without transporting too much water (as copper sulphate solution). The bottom of the holes are filled with manure, and as soon as the ground settles will fill with new soil.—Subscriber, Sebastopol.

Probably a good whitening of the hole with air-slaked lime, before putting in the new soil, will do as much good as anything. It will at least comfort you by the consciousness of having done something. We should count most upon the use of good soil from a distance from the old holes. Put a good deal of soil between the roots and the manure. We would prefer to put the manure on top after planting. If your blasting shattered the old subsoil so as to furnish better under-drainage the apples may come through all right. Otherwise they will follow the pears probably, after awhile. Rotten root is usually the result of planting in a place naturally defective.

Dried Fruit Middlemen's Profit.

[Written for PACIFIC RURAL PRESS.]

In another article appears the plaint that dried peaches have sold at 2½ cents. We inquired the retail price of fancy dried fruit in quantities up to 8 or 10 pounds, from three representative grocers of San Francisco. They follow: Goldberg, Bowen & Co., Peaches, unpacked, 12½-15 cents per pound, peeled, 25-30 cents, apricots 20-25 cents, nectarines 20c, plums 20c, prunes 60-70s, 10c, larger sizes 22½c, pears 25c, black and white figs 10c, apples 10-15c, seedless raisins 2 and 3 pounds for 25c. At the grocery department of the Emporium, the following prices were given: Peaches 25c, apricots 25c, prunes 15-25c, pears 20c, black and white figs 10c, cluster raisins 25c, seedless raisins 15c. Johnson Bros. in another part of the city quoted peaches unpeeled 10c, peeled 20c, apricots 12-15c, prunes (50-60s) 9c, (40-50s) 12c or packed in 5 pound boxes 65c, (30-40's) 15c, pears two pounds for 25c, black and white figs 7c, apples evaporated 10c, seedless raisins 2 pounds for 25c, clusters 20c, in 5 pound cartons 95c.

Two ways of getting reductions on these prices were offered. One was for neighbors to club their orders and have them shipped by freight in larger quantities, in which case the last named grower prepays the freight. The other way is to buy in the original 25 and 50 pound packages and get a small discount.

In calling attention to these prices and the ones received by the grower, we are not attempting to blame any set of commercial men—the facts are that there is too much expense in handling between the grower and the consumer here in California as well as to the East. That expense added to the retail price puts dried fruit out of reach of the greatest consumers, those of little means and large families.

To get rid of our dried fruit crops we must increase consumption. Aside from putting up cleaner, higher grade fruit in attractive packages, we must reduce the price to the consumer.

To keep on in the dried fruit business, especially peaches, we must raise the price to the grower.

Reduce the "Between" Expenses.—The only posible way to accomplish these antagonistic "musts" is to decrease the expenses between producer and consumer. One of the most promising ways to do this with dried fruits has been tried for two years by the Winters Dried Fruit Co. They pack first-class fruit in boxes holding 8 pounds net, or in cartons holding 2½ pounds net, with three different kinds of fruits in each double-faced corrugated board package. They quote prices on a delivered basis that compare very favorably with the retail prices quoted above. They ship to any part of the United States by express or parcels post, whichever is cheapest. We quote below what Manager F. W. Wilson says about the project:

"Our company was prompted to pack dried fruit in cartons on account of the very attractive rates which the Wells-Fargo Co. was making to the East. For instance, the cost of sending a 10 lb. package East by parcels post into the eighth zone is in the neighborhood of $1, whereas he can send such a package by express to any point in the United States having an express office, for 40c.

"We are taking hold of the proposition rather slowly and carefully, trying to put up just as attractive pack as possible, and endeavoring to develop the business on its merits. So far, we have done very little advertising. We are frank to say that we are quite encouraged in this work as orders are coming in daily and we receive so many compliments on the pack. We feel that the business will be a profitable one in the near future."

Their price list is given below for comparison with the retail prices in San Francisco. The "delivered" price applies anywhere in U. S.

Price Per Pound for Dried Fruits.

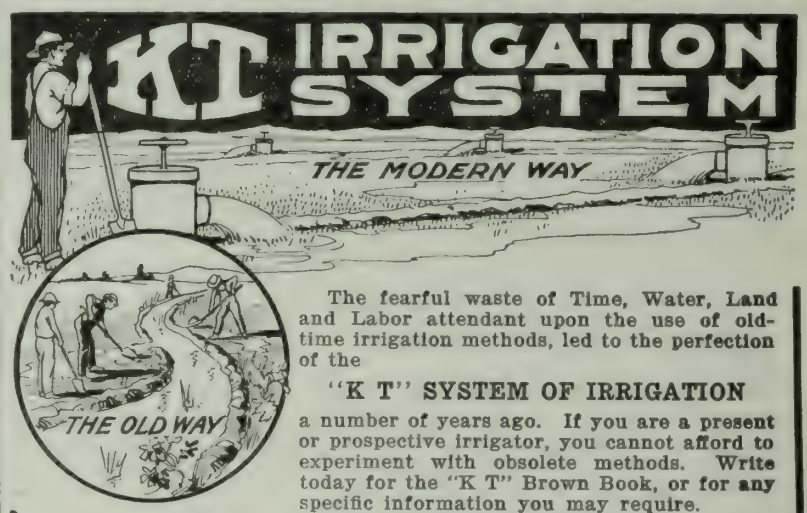
FRUIT	In 2½ Pound Cartons F. O. B. Winters	In 2½ Pound Cartons Delivered	In 8 Pound Boxes F. O. B. Winters	In 8 Pound Boxes Delivered
Apricots	16	20.8	13¾	18¾
Peaches	10	14.8	7½	12½
Prunes	12	16.8	9⅝	14⅝
Pears	14	18.8	12½	17½
Figs	8	12.8	4½	9½

The Kind of Packages.—The package in which the cartons are shipped is 9½ x 15 x 2½ inches. It comes flat, the cartons are laid on it and it is folded over them, coming together across the center of the flat side with end flaps inside. All the joints are then sealed with gummed paper. On one flat side is printing. In the upper left hand corner are the "return if not delivered" instructions, under which are the names of all the fruits handled. The three names representing the fruits inclosed are underscored with a blue pencil. Below this is room for express pasters and beside it is the legend, "The package contains three 2½ pound cartons, selected California Dried Fruits **packed where grown**" with a space for the company's name and address. Below that is space for the address of the one to whom it is sent.

The cartons are each about 9½ x 5 x 2½ made of light-weight cardboard and printed with an attractive colored picture on the upper side, with the brand and weights. Both ends are labeled "Sun Cured," and on the bottom is printed "We pack peaches, apricots, prunes, figs and pears in 2½ pound cartons, and 8 and 25 pound boxes. Write for booklet of recipes."

These cartons and packages, containing only the finest fruit, are their own advertisement and are sure to enlarge the sales as each customer tells his friends. Advertisements in journals which reach the consumers would probably make the business increase with a jump; and it is in this way that customers could be most quickly secured. While the Winters company's prices do not greatly benefit the consumers, they return to the growers a large part of what is usually absorbed in the between.

Anybody Can Do It.—We see no reason why you, Mr. Dried Fruit Grower, should not practice the same method of disposing of your surplus dried fruit, and not leave it for the worms to spoil. There is more money in it than in selling by the box to the dealer, and your fruit, clean and neatly packed, will tempt more appetites than the common dishevelled array seen in the stores. You might reduce the price to stimulate consumption and still make more than you have been making.



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Supply—Grown commercially only in California.
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Weigh the evidence, and your own good judgment will tell you to plant

SILVA-BERGTHOLDT'S
Foot-Hill Grown
Apricot Trees

Prized for their thrift, hardiness, good root systems and freedom from disease.

Though we have an extra fine block of Blenheims, Royal, Newcastle Early, Moorpark, Routier's Peach, and Tilton on Apricot, Peach and Myrobolan Root, a shortage of good stock is expected this year, so order now and get choice trees.

WRITE US FIRST

The Silva-Bergtholdt Co.
P. O. Box B Newcastle, Cal.

Clouds—Their Effect on Frost.

[Written for PACIFIC RURAL PRESS
By J. E. Adamson, Pomona, Cal.]

Clouds are seen in several different forms, and are classified under four general headings as, Cirrus, Cumulus, Stratus, and Nimbus.

They are of great value as weather indicators, if the conditions governing their formation are studied. They were in fact the principal basis for scientific weather predictions before the days of fine instrumental knowledge of atmospheric conditions.

Dr. Ford A. Carpenter, in his "Clouds of California," says of clouds as weather indicators: "The clouds by their character indicate the condition of the upper air and also the drift of the atmosphere. They also serve to indicate the observer's proximity to the low pressure area."

The observation of the clouds, taken in combination with the story of the upper air as given us by the various instruments used in the study of weather problems, will give us at least a general idea of the intensity of the frost conditions probable for twenty-four hours in advance.

The type of cloud which is of most interest to the frost fighter is the Stratus, because it is the form that most readily lends itself to the prevention of heat losses from the surface of the earth.

The name of this cloud form is taken from its shape, namely that of a layer, forming a huge blanket over the earth in the area in which the cloud is developed. This intervenes to stop the heat from radiating, by placing in the path of the heat waves the minute particle of water of which the clouds are made. This deflects the waves from one to another of the globules of water, each in turn absorbing a portion of the heat, but letting very little pass through. The action is similar to that of a cloth cover over plants, or the glass of the green house. The degree of protection afforded is remarkable. Even a thin veil which will allow the larger stars to be seen will not only prevent a serious fall in the temperature, but will show a rise of two or more degrees.

One fine thing about the Stratus cloud is that it is an evidence of a more or less heavy belt of moist air not penetrated by cross or upward currents of air, and indicates that the conditions are reasonably settled.

On the other hand the Cumulus cloud is an indicator of upward air currents, and is for that reason an evidence of unsettled conditions. We have seen the cumulus clouds roll in great masses, banking against the mountains about sunset, making a brave show of increasing cloudiness, only to see them disappear almost as by magic, leaving the air clear and sharp, with the possibility of low temperatures by morning. The Nimbus or rain clouds are always welcome, for the reason that when there is abundance of water there is little danger of serious freezing weather. Many people are torn with fears when a heavy cold rain leaves the mountains white with snow. The fact is that had the low temperatures that made the snow come without the moisture with them there would have been some busy times for the frost fighter, and also it is not to be thought that snow brings with it any severe cold. If snow brought cold nights to us there would be a continuous series of freezing weather as long as the snow should last, which is not the case as any thinking person will admit.

Clouds as a whole are formed by the cooling of moisture-laden air, and when the cooling process is complete the clouds will disappear. This action is responsible at times for the formation of fog near the ground surface on cold nights when there is present a large amount of moisture, either in the air or in the ground, from rain.

If several cool nights follow in succession there will be some considerable reduction in the humidity, with an increasing danger of serious frost conditions. This is partly responsible for the known and oft-stated condition that the third night is the worst in a time of frost. Moisture is our greatest ally in the frost fight whether it appears in the form of clouds in the upper air, or in the formless thing called humidity. It will be found that on a night of high relative humidity the fuel required to hold the orchard temperatures above the danger point will be much less, than on nights when the humidity is very low. The reason is obvious when we have it in our minds that the same moisture-laden air that prevents the radiation of heat from the earth, also prevents the rapid passing off of the heated products of combustion from the orchard heaters.

COVER CROPS INJURIOUS.

[Written for PACIFIC RURAL PRESS.]

That there are two sides to the cover crop question has been observed by a number of Santa Clara fruit growers. If holding the leaves late into the winter strengthens the trees and fruit buds, then a number of unirrigated orchards which are intercropped to winter vegetables are in much better shape than those where a cover crop is planted or allowed.

Except where the winter rain has been unusually heavy and well absorbed, the covercrops evaporate so much of it that the trees and fruit suffer. Not so much is evaporated in winter, but in spring, during the warm and hot days that precede the drying of the ground to a point where it can be plowed, a deep, heavy covercrop exposes a vast pumping surface to the sun and winds from which an almost unbelievable tonnage of water is evaporated. Much of this comes from beneath where the soil should be partially dried for plowing, and is wasted. The culture of vegetables assists the absorbing power of the soil and helps to retain the moisture for the later use of the trees.

Gophers have not bothered walnuts on Alvin Wheeler's ranch in Santa Clara county, though they have been numerous and injurious to other trees interplanted with walnuts. He drowned a lot of them and trapped 70 or 80. Their holes were found all around walnut roots but the roots were not gnawed.

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Lemons In Santa Cruz.

[Written for PACIFIC RURAL PRESS
By A. W. Robinson, Santa Cruz.]

The lemon thrives best in localities which are, in great measure, free from frost, notably a large area in the Southern coast counties, on account of the moderating influence of proximity of salt water and local topography. The coast counties are not as well adapted to raising oranges as the interior of the state, where a higher temperature prevails, but it does not require a high degree of heat to develop acid; and continuous ripening of lemons is not interrupted where there is a low summer temperature. Curing and storage of lemons are more easily secured in the most equable temperature and the moist air of the coast counties.

For commercial purposes it was long thought that successful lemon culture, as a matter of course, would always be confined to our southern counties, but it has been demonstrated that this fruit can be successfully grown in Santa Cruz county. Many years ago lemon trees were set out in numerous gardens in Santa Cruz county more for ornament than for anything else. They made good growth and fruited satisfactorily.

From one tree thirty years old R. S. Miller took fruit, last season, that netted him $62. From one tree six years old Jas. King sold one hundred dozen, last season for $25. At an elevation of 800 feet, four miles from Soquel, five Eureka lemon trees, 12 years old, yielded 181 dozen at one picking. At Laurel, 1800 feet elevation, E. A. Bassett has trees which bear full crops every year without irrigation. B. Parish, of Soquel, has one Eureka tree that will bring him $50 this season. Eurekas thrive and fruit well on a place situated within some 300 yards of the ocean. From 17 trees A. A. Garden gathered 100 dozen each. As a rule lemon trees bear three years from the time they are set out. The writer has a tree obtained from the nursery last winter upon which half a dozen fruit have set in but they will not be allowed to attain maturity. One man in the Santa Cruz mountains set out 79 trees this season, an addition to 35 previously planted.

Last fall an exhibit of these lemons made a favorable impression which resulted in the planting of many small orchards this spring, estimated to aggregate 3,000 trees.

The lemon crop is ready for gathering 12 months of the year, and, after adequate curing, is ready for the market. For this fruit there is a universal demand, but so far the local consumption equals in good degree the production of neighboring orchards. The completion of the municipal wharf, which will extend into the bay over half a mile, where the water is thirty feet deep, will afford transportation facilities that will greatly stimulate lemon culture in this county. Fruit of all kinds, and the varied productions of this section of our rapidly advancing State can be shipped easily and expeditiously, to near and distant points. Rail communication has, for many years, been perfect.

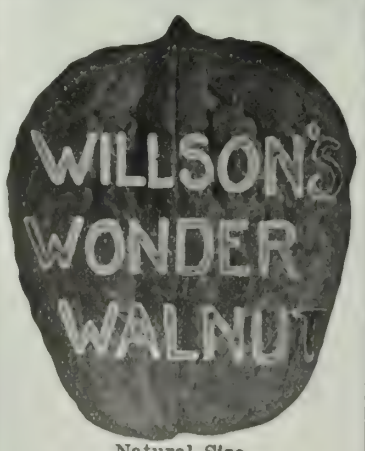
The Eureka variety is the most popular here, as it is in many an other locality in this State, the Lisbon and the Villa Franca not being so much in favor. The three varrieties named are the principal ones raised in the southern counties. The Eureka originated in Los Angeles county from seed imported from Holland in 1872; has a sweet rind, is very free from thorns, is a good keeper, and is especially popular in the coast regions, less so in the hot interior valleys because of its scanty foliage.

The tendency of the lemon tree is to grow rapidly upward, while the largest proportion of good fruit is borne on more or less zigzag horizontal branches. Lemon sap flows more freely in the vertical branches, hence these grow at the expense of the lateral ones. A lateral, crooked branch is more fruitful than a straight, upright one. Fruitfulness and high quality of fruit are the results of slow, but steady circulation of the sap. The finest quality of fruit is borne on small fruiting brush on the interior of trees and the sap of such brush should be protected from thieving suckers.

The objections to this variety are a tendency to set fruit on the tip of the lateral branches and the inclination to grow long canes or branches, thus leaving the fruit too much exposed to the hot rays of the sun in the heated term of the summer.

Quite recently the new industry of obtaining flavoring extract from the Santa Cruz lemons has been started here. This output is of the finest quality and bids fair to attain quite large proportions.

Limes of most excellent quality and of large size are grown in the garden of our county superintendent of schools, C. M. Price, in east Santa Cruz, on two trees that have been bearing two years. The flavor is exceptionally fine and the ease with which the fruit is grown indicates the not at all difficult matter of raising the popular fruit in this county.



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All trees grafted on Cal. Black
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TRYING OUT WALNUT VARIETIES.

[Written for PACIFIC RURAL PRESS]

It was last spring that Sutter County Horticultural Commissioner H. P. Stabler showed us in Yuba City what he claims is the largest walnut tree in the world, a Paradox 100 feet high, 16 feet in circumference, with 108 feet spread. The California black walnut is indigenous to that section. More than of old, walnut growers are coming to use black walnuts or their hybrids for English walnut stock. From the roadside planting in that country as well as small new experimental orchards, Mr. Stabler would recommend the Eureka. He says it doesn't sunburn there, nor does it blight. Regular and early bearing of nuts that bring a cent or two per pound more than other varieties are other advantages claimed.

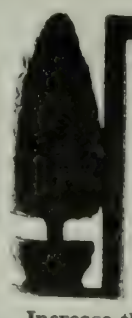
A little seven-year orchard belonging to C. K. Woods a few miles out of Yuba City contains many varieties which may be distinguished late in April by lateness in putting forth leaves, diameter of trunks, habit of branching, etc. Some were just bursting their leaf buds, while nuts were half grown on others. Some trees had grown fast, others slowly. Some were open topped and thin of foliage. These should be avoided in hot regions. The crop of a year ago was seriously reduced by sunburn. The community value of orchards like this is great in showing the varieties, best adapted to any section before large investments are made by many growers. Look around for such before deciding what to plant.

LIQUID WHALE-OIL SOAP.

[Written for PACIFIC RURAL PRESS]

Buying whale-oil soap by the gallon instead of by the pound would seem to have several advantages. Instead of losing time dissolving the hard soap in heated water, the liquid soap is quickly stirred up with the spray pump agitator in cold water. It has the same fat content pound for pound and weighs 9¼ pounds per gallon. It can be bought in 50-gallon lots at 45 cents per gallon, f. o. b. in Alameda county, the buyer paying the freight.

It isn't alkali water in the subsoil that hurts trees so much as the rise and fall of alkali water in the subsoil, according to Prof. E. D. Ball of the Utah Experiment Station, than whom very few people have studied alkali more thoroughly. He has traced apple roots 16 feet deep and found them all dead below 8 feet. Some had branched at 8 feet and sent down laterals during a lowering of the water table in summer. These laterals had been killed by the rise of the soil water next spring. The roots could not penetrate the dangerous soil below the existing water table.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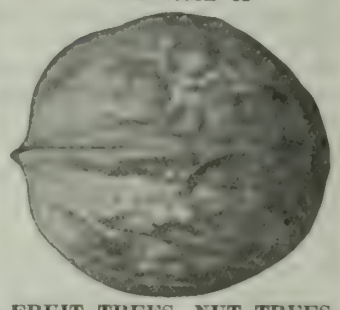
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We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

EFFECT OF BLUE MOLD ON PRICE.

[Written for PACIFIC RURAL PRESS.]

Last spring while on an Eastern trip for Pacific Rural Press, we saw on Erie pier in New York, where California fruit is displayed before being sold at auction, a box of 324 navels from F. B. Devine of Riverside. The box was one of several in that lot which were to be sold, to the highest bidder. It was considered representative of the rest in the lot, its top having been taken off so that intending buyers could inspect and decide what price to bid on that lot. In the top layer of that representative box were five rotten oranges, rotten with blue mold. We saw many similar boxes displayed on the floors of the auction companies in the other big cities, the top tiers showing sometimes more rots than this. Ye shades of a California citrus reputation! How long can ye haunt those markets. How long can ye be bolstered up by the advertising of the Exchange and the activity of its agents and the marketing of sound fruit by part of the growers.

The causes of the blue mold on packed oranges and means of preventing it were discussed in Pacific Rural Press May 30 and June 13. Some of the Eastern folks who handle oranges are sore about the mold, but not half so sore as the producers ought to be at themselves.

Estimating the Rots.—Here is how a representative of the Philadelphia Auction Co. told us that the bidding value of a box of moldy oranges is estimated by the intending buyer.

Suspected oranges are punched with the finger and all the rotton ones on the top layer are counted. That number is multiplied by the number of layers, to get the total rots in the box, and that total is multiplied by two. The resulting number is considered the number of rots in the box and the discount made is in proportion. The multiplication by two is to arrive at a basis for discount which will pay the cost of sorting and loss by further infection. That discount applies to all the boxes in that lot, so that as one man said, "Two rots may make $100 difference in the price of a car. If there are 7 rots on the top layer of a box of 150, multiply by five, the number of layers, then by two. That equals 70 oranges considered rotted out of a box of 150. The system is spoken of as a "double discount."

Other Effects of Rots.—But the loss isn't all due to such figuring. The buyers smear the rots sometimes over the others so that the messy box sells still lower. This practice is reduced to a minimum by a corps of men who watch the fruit while it is being inspected. An instance of the need of such watching occurred some time ago when a buyer was suspected of replacing sound oranges on display with rots. He could then, of course, bid higher than his compatriots who didn't know that the rest of such a box was sound. J. J. Donelly, one of the fruit truckers, was detailed to watch this buyer one day after a kick had been registered because some growers' fruit had sold at too low a price.

He took off his coat and loafed around next day, telling the suspect that he had lost his job on account of the kick and saying hard things about the company he had worked for. The suspect was not then so careful about being observed by Mr. Donelly, who caught him replacing two sound oranges with rots. The watcher, with D. D. Black, New York manager for the Exchange, immediately took the buyer to task, finding the two sound oranges in his pocket, and the rots wrapped in paper of a different brand.

Such rascality is, of course, rare, for it is a penitentiary offense and there are many watchers.

It wouldn't be hard to attach your motor to a grindstone.

"Pears stand more alkali than all the rest of fruits put together," says Prof. E. D. Ball of Utah Experiment Station.

"I prune Sugar prunes just like apricots, because they are such vigorous growers," said a successful prune grower recently.

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We are universal providers and grow what we believe to be the finest collection of fruit and ornamental trees, vines, shrubs and plants on the Pacific Coast. Our stock comprises practically everything that grows.

No matter what you may have in mind to plant this season, you will do well to get in touch with us at once, and find out just how we are equipped to fill your orders and get our suggestions as to what would be most desirable and profitable for you to plant. Our more than 30 years of experience will be of value to you and cost you nothing.

Our nurseries are located in the choicest spots of California, under ideal soil and climatic conditions, and enable us to grow a larger variety of stock than is possible with others.

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ALL STOCK TO BE TRUE TO NAME and in "A1" CONDITION

If you place your order with Fancher Creek Nurseries, you can depend upon it being filled with best quality trees, and being shipped in such condition that the trees will reach you in first-class shape. We do not sell any stock that we would not be willing to plant ourselves and our record of more than 30 years in this State is sufficient guarantee of our reliability. Ask anybody who has ever planted Fancher Creek Trees and they will confirm this statement.

Our 1914-1915 Illustrated Catalog will soon be ready.

If you wish a copy send us your name and address now, and we will send you one as soon as it comes off the press—free. Send us your list of probable wants for prices and suggestions.

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GEO. C. ROEDING, Pres. & Manager
Paid up Capital, $200,000.00.

Apples Sold Themselves.

[Written for PACIFIC RURAL PRESS.]

A friend told us that J. E. Hassler of El Dorado county would ship us a box of juicy, fragrant, tender, delicious Ortley apples for a dollar and we pay the express—"the best apples you ever set your teeth on." That seemed like a big price to pay in a season when apples generally are dragging on the markets, but we wanted those apples for Thanksgiving and got them, and are well pleased, even at the extra price. In acknowledging receipt of the order, Mr. Hassler says that his whole crop is already sold. How he did it is of interest, written in his own words.

"You ask how much of this trade I have worked up. I may say it has worked itself up. By sending out good honest fruit to the purchaser, he is so well pleased that he tells his friends about it, and they send in a trial order. I grow all this fruit myself, and usually sort it and pack it myself. All of it is sized, ring-measure. This season, on account of there being such a large apple crop, I have not shipped any apples under 2½ inches. In fact I have no apples that small, as we thin them the same as peaches. But there are a few varieties such as Limber twig and Winesap that run mostly to small sizes (2¼ to 2½ inches) in spite of thinning. The bulk of my apple crop I have been selling in a town up the Sacramento valley for the past eight years or more. They are handled by an honest reliable firm. I have given them the right to offer the buyers of my apples the privilege, if not satisfied for any reason, after purchasing and eating a half dozen apples, to bring them back and get their money. I have already disposed of my whole crop at what I consider good prices in a season like this."

Selling Apples Locally.—A note was made last spring of how A. F. Baker of Santa Rosa had lost his late apple crop by an unusually late brood of codling worms, though he had sprayed about five times. This year he has about 95 per cent worm-free apples and the crop is fine. Disposal of his Baldwins, Smith's Cider, Newtowns, and Ben Davis was the problem which confronted him this fall. He put up an apple drier and saved a great deal of the crop that way. More of the crop is now being made into cider as soon as ordered, because Mr. Baker finds that the two gallons of cider he gets from a box of good apples nets him about as much as the fresh apples he sells at 50 cents per loose lug box.

With the fresh apples he has allowed his young son, Ewell, the use of a one-horse wagon to sell them about town after school hours. Because they are of first quality, Ewell reports that where he sells one box, his customer tells the neighbors, and in some cases three or four boxes are sold on the merits of the first. On a recent Saturday he sold 27 boxes in five or six hours. And the telephone orders that followed gave him a job delivering several boxes each night after school.

The manager of the county farm ordered 20 boxes, and when they were delivered the matron of the hospital ordered two boxes packed at 50 per cent increase in price, to send to her people in San Mateo county.

Another customer who had previously bought cheaper apples came back for more of the Baker kind because she said they were better.

Another son is in Sacramento valley, and he has sold a great many in Colusa county at odd times.

To the small apple grower who can least afford to lose his crop, we would suggest that he follow the examples of Mr. Hassler and Mr. Baker, with the added suggestion that he select the nearest community in which apples are not largely grown; and let people know that he has apples for sale, by continuous advertising in the local paper. That is much cheaper than getting customers by personal visits, and it reaches more people. Delivery then of only choice fruit will automatically enlarge the demand as it has for the gentlemen mentioned.

PAINTING SULPHUR HOUSE.

To the Editor: With what can I paint the inside of a wooden sulphur house to prevent the lumber from decaying.—A. N., Fresno.

[We are of the impression that it is not the general practice to paint the inside of sulphur houses, but these are lined with heavy paper or felt. Personally, the writer has never seen a sulphur house painted on the inside.—S. W. Foster, Mgr. General Chemical Co.]

[We see no use in painting the inside of a sulphur house. Sulphur, being a fungicide, kills anything that would hurt the lumber.—Editor.]

DEEP ALFALFA ROOTS.

In digging a cess-pool on land that had not been irrigated much, a farmer this fall found alfalfa roots as big as a small straw, from two-year-old plants, at a depth of 12 feet. This indicates utilization of ordinary unavailable moisture, and loosens the soil to that depth both by their own growth and by the space left when they decay.

LATE BLOOMING APRICOTS.

For late-blooming apricots, M. Sharpe of Vacaville suggests the Toyavale and Giffin's Choice, which he has probably tested out on his ranch and which may be obtained in Texas. It may be that some of our California nurserymen can furnish them too. Mr. Sharpe says they are worthy of a trial.

A Tip on Almonds

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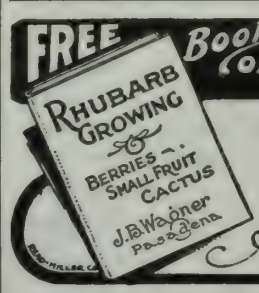

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French, Imperial, Sugar and Standard Prunes on All Roots. Apricots, Bartlett Pear, Cherry, Peach, Apple, Etc.

FIRST CLASS STOCK TRUE TO NAME.

Hiring Prune Orchard Work.

[Written for PACIFIC RURAL PRESS.]

Spreading fertilizer on the garden in true yeoman fashion, State Senator-elect J. W. Stuckenbruck of San Joaquin county received the numerous hearty congratulations of his constituents as they drove by one day shortly after election.

It was no wonder that his orchard did not bear as well as it might, for Mr. Stuckenbruck is not backward in saying that he neglected it. One naturally would neglect most of his other interests in putting up as good a fight for office as he did, and in winning with so large a majority.

"A prune crop in this country depends altogether on cultivation and care," said he. "Here's my 11-acre orchard that bore 16 tons year before last when my neighbor with the same acreage, got 50 tons and 500 pounds which he sold at $30 per ton on the tree."

Mr. Stuckenbruck has a blacksmith shop on the farm and works at the trade, hiring his orchard work done.

The trees 13 years ago were almonds, all of which were grafted to Sugar prunes. The 125 Giants which have been bearing only two years produce fine dried prunes, but must be seeded before dried. They have sold for about $16 each year.

Expenses.—Pruning once a year costs $24 for the whole orchard, and is done any time after the leaves fall. One lime-sulphur spray every winter costs $21 to $25. Sixteen inches of rain are considered enough for prunes, and if not that much falls, an irrigation is applied from the well. This seldom occurs.

The orchard has not been intercropped, neither has it been fertilized except by the natural cover crop of bur clover and filaree besides the leaf mold. But Mr. Stuckenbruck sees that it is losing fertility, though it is naturally a very fertile, heavy, loamy adobe, with some streaks of sand. Last spring the cover crop was waist high, but this winter he planned to try vetch on one part where the natural cover crop is light.

Plowing with two horses, he aims to have the dirt turned eight inches deep, but it is usually only six. With three horses and a 12-foot furrow, the whole orchard is harrowed both ways in a day. That makes it cost about 30 cents an acre for each time. It is also disked at the same cost. Total plowing and cultivation costs about $50 per year. The soil is adobe enough to make it necessary to cut up the clods as soon as they are turned by the plow in the spring. This prevents their baking and by keeping more or less cultivation going, the soil remains smooth and does not crack.

The crop is sold on the tree—this year at $37.50 per ton; and only one year has the price gone as low as $25. The land cost him $190 an acre nine years ago, but the fact that an old peach orchard across the road is being offered in 20-acre tracts at $225 per acre shows that prices have risen so that the interest on investment is now about $15 or $20 per year per acre on the bearing prunes.

The crops have sold on the trees for the following prices the past eight years: $727, $818, $400, $657, $90, $792, $427, and $337, totaling $4,248, or nearly $45 a month straight through. The expense has been about $22 at a reasonable estimate, so that the orchard has yielded $23 per month besides interest on investment. This is not so bad, considering Mr. Stuckenbruck's campaigning activities, his three months per year in the legislature for the past five years, the fact that he works in his shop and gets shop rent and house rent besides.

Nevertheless, the fact remains, as he says, that proper care would greatly increase the crops and the profits.

DARKENING GREEN OLIVES.

[Written for PACIFIC RURAL PRESS

Business organization of olive growers into locals of a state wide Association has for some time been favored by Pacific Rural Press from the marketing angle. Now that the orange growers are prevented from shipping immature oranges, the suggestion comes in the following extract from an editorial in the Oroville Register, that green olives should not be processed to make them look like ripe olives. The same detriment to the market for bona fide ripe olives would be felt as the shipment of immature oranges has brought to the citrus industry.

"It should be remembered that the California ripe olive industry has been built upon the ripe olive and not upon the green olive. The delicacy of flavor that has created a world-wide market for California olives can be obtained only where there is a full oil content. A green olive, however cleverly it may be processed, can never have the flavor of the ripe olive. The olive industry should grow enormously. But if it is to grow, the demand that will make the increased market must come from a growing knowledge of the delicious flavor of the real ripe olive. This increased demand will never be built up by green and immature olives.

"The interests of growers, packers, and consumers in this matter are identical. And while there may be a little danger of frost by leaving olives upon the tree until there is no question of their maturity, this risk, like that of every other industry, must be borne by the consuming public. And in fact there is less excuse for harvesting immature olives than there is for other crops, for if frost does come, there is still salvage in the olives for oil.

"The Register would suggest that the need for an olive growers' association in this district is becoming more apparent each year. Through such an association a uniform practice could be established for picking olives, that would prevent abuses arising, with a most serious aftermath for both those who are guilty of perpetrating the abuses and those innocent of them."

The average daily attendance at the Panama-Pacific International Exposition during Oct. was 9,498. The total for the month was 294,433. The largest single day's attendance during that period was Oct. 11, when 31,000 persons passed through the exposition turnstiles.

The Panama Canal and The California Fruit Grower.

P-A-N-A-M-A C-A-N-A-L spells, to most people, merely Panama Canal, but to the California Fruit Grower it spells OPPORTUNITY, for fruit can now be shipped, via the Canal, to the Atlantic Seaboard, at

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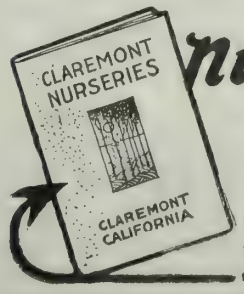

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State Imports Parasitic Insects.

[From Address by Supt. H. S. Smith of State Insectary at Fruit Growers' Convention.]

It is an old story, and one with which you are all familiar, that California spends over a million dollars per year for fumigation against citrus insects alone. This, remember, does not include the injury done by the pests, but represents only the actual cost of the measures taken against them. If we should add to this the amount of damage caused by smutty fruit, and injury to the trees and fruit caused from the drain upon the sap by the feeding of myriads of scales, I think we can safely charge to insects a total expense to the citrus growers of California of at least a million and a half dollars per annum.

We are not satisfied with fumigation and spraying alone. We recognize their great value; without them the citrus industry would now be impossible, but we believe that we should spare no effort in reducing losses due to insects. For this reason we have the State Insectary, an institution for studying the natural control of insects and whose function is and should be supplemental to the work of fumigation and spraying.

Perhaps almost all insects have, in their native homes, natural enemies or parasites which prey upon them and thus keep them from becoming too numerous. Insects, like fishes, have very great powers of reproduction, and in many cases it is only by the action of the parasites that they are prevented from becoming so abundant as to destroy entirely certain of our cultivated crops. These parasites occur in the native homes of the insects.

But they do not come to this country when their host insects are imported. They are very timid and fly away when disturbed. Ladybird beetles, among which are our best insect friends, have a habit of dropping to the ground when disturbed. Therefore, if a nursery tree, for example, infested with scales, is dug up in Europe for shipment to California, the parasites or predaceous insects are frightened off, with the result that the scales are sent to this country without their natural enemies. This leaves them free to breed here, without the restriction imposed by parasites in the native home.

The function of the State Insectary is to obtain as many as possible of these parasites and predaceous insects which were left behind and which tended to keep the imported insects in subjection in their native habitat, and introduce them into California.

During the past two years we have maintained a small, but well trained and experienced corps of men for this work. One expert entomologist was kept in Europe, until the outbreak of the war, searching for promising beneficial insects. Another laboratory was and is maintained in Japan for the same purpose under the able supervision of Dr. Kuwana, official entomologist for the Japanese government and a scientist of international repute. Relations have been established with the government of the Union of South Africa, from our standpoint an unexplored region, whereby we have been able through the kindness of Professors Lounsbury and Mally, entomologists for the Ministry of Agriculture, to obtain regular sendings of black scale parasites of great promise.

In China we have arrangements with a faculty member of one of the colleges, who is to carry on investigations regarding natural enemies of insects in that region.

Through the U. S. Bureau of Entomolgy we have obtained much assistance, especially from its Chief, Dr. L. O. Howard, in the matter of arranging for material to come through the New York port without customs inspection. He has also aided us in arranging for co-operative work with foreign entomologists.

The number of species of insects imported during the past two years is considerable, the more promising of which are as follows: From Europe we have obtained enemies of the citrus mealy bug, the best of which seems to be a tiny chalcid or parastic fly called **Leptomastix.** This parasite breeds in the newly hatched and very small mealy bugs, and in Sicily is apparently an important factor in the control of this pest. One colony has been planted in Southern California and we are now engaged in breeding several additional colonies in the Insectary at Sacramento. These may not be ready for colonizing until next spring. This parasite, coming from Sicily as it does, where the climate is similar to that of California, ought to become of value here. It is doing excellent work in the Insectary. What it will do in the open remains to be seen. We also obtained from Sicily, but in too few numbers for colonizing, certain ladybird beetles called **Chilocorus** and **Exochomus,** which are said to be of considerable value in Italy in controlling the black scale. These should thrive in California and an effort will be made next year to get them introduced.

In South Africa we have occupied ourselves entirely with the parasites of the black scale. The mealy bug is as yet untouched in that region. Messrs. Lounsbury and Mally have sent us so far about a dozen species. Most of them naturally will prove of little value, but out of the lot we hope to get at least one or two good ones, and our laboratory investigations so far certainly justify our hopes. It will be remembered that it was from this locality that **Scutellista** was obtained. One of the new species, a small chalcid fly known to entomologists as **Cocophagus orientalis,** has done wonderful work in the Insectary. The beauty of this species is that, unlike Scutellista, it breeds upon and destroys the young black scale, before it has an opportunity to lay its eggs. As we have no parasite of importance in California which breeds upon this stage of the black scale, it will readily be seen that its introduction would fill an important gap in the natural control of this worst of our pests. We have already placed in the field several colonies of this parasite and have found it breeding during the summer. It ought certainly to thrive here and our efforts will be continued until it becomes thoroughly established. Prof. Lounsbury had had the black scale under observation in South Africa for many years and he is responsible for the statement that it is effectually controlled in that country by parasites, excepting in those restricted localities where the Argen-

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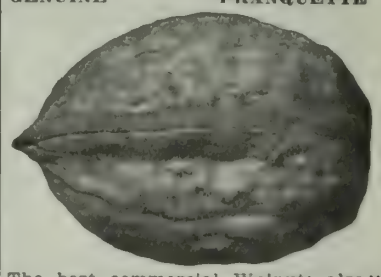

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KIRKMAN TREES

and the treatment Kirkman accords his customers. Our steadily growing patronage has demanded that we grow more stock each year, until we now have more than five million trees and vines growing in our nursery plants in California and Arizona. A considerable portion of the stock in our nurseries, which will be ready for delivery this coming winter and spring, is already sold to early customers, but we still have a complete stock of all varieties of fruit trees and vines, as well as a general assortment of **ORNAMENTAL** and **SHADE** trees, etc, etc. What are you going to plant? We have it, without doubt, in large or small quantities. Illustrated price catalog on application. Please mention what varieties you are expecting to use.

KIRKMAN NURSERIES, P. O. BOX 604, FRESNO, CALIF.

tine ant has interfered. So I believe that we have every reason to feel encouraged over the outlook.

There is one great danger in all this parasite work. Who can compute the vast amount that has been lost through the dependence which farmers have placed upon the chinch bug fungus and grasshopper fungus, to the neglect of tried and efficient methods of control; or the dependence of the deciduous fruit growers upon such parasites as **Comys fusca** and **Calliephialtes messor**, in face of proven means of control by spraying? Unfortunately it is essential that our exeriments be conducted without publicity. Human nature is pretty much the same the world over and most of us, if we are led to believe either through the teachings of pseudo-scientists or through our own observations that we can control our pests by the spectacular and inexpensive introduction into our orchards of a few parasites, are pretty liable to neglect the methods of repression such as spraying and fumigation, which are expensive but of proven value. This great loss to the grower we can avoid only through working quietly and conservatively.

We were carried off our feet by the marvelous work of the Vedalia against the cottony cushion scale, but, to quote from President Wilson, "we have now come to the sober second thought." While we might still hope to find a "second Vedalia" for use against certain of our insect pests, our success by no means depends upon such a contingency. It is in the partial control of several species rather than in the complete control of one that we put our faith, and it is on such a hope that the present policy of the Insectary is based.

With such pests as the codling moth, where the artificial remedy is so perfect and so inexpensive, when we consider that regardless of the moth we should generally have to continue to spray for scab, it is in my opinion the height of folly to attempt to make anything of the parasite method, when the most we could expect would be clean fruit for perhaps three out of four years.

NOW PRUNING RASPBERRIES.

[Written for PACIFIC RURAL PRESS.]

Not many berry patches are noticeable on the level part of the San Jose section, but one of these is four acres of Cuthberts close to Santa Clara. You might help yourself to belated berries now, though the tall waving canes are due to take a rest, having shed most of their leaves. Some are 3 years old—some are 7—there isn't much difference in the crop, since the Cuthberts bear a little the first year they are planted, and a full crop the next. They are set in matted rows 2 to 4 feet wide and 5 to 7 feet apart. The greater distance is preferred because it cheapens the cost of picking and admits more light. Part of the canes are semi-supported by a wire stretched from a stake at the end of each row along each side of the canes about 2 feet above the ground. Such a system is pronounced no good—if the wire is too low the canes bend over between the rows as badly as ever—if it is too high, the later shoots get outside the fence and run riot. Putting two pairs of wires on each row at different heights would solve those objections, but would hold the canes too tightly to admit enough air and sun to vitalize the fruit buds, and anyhow, it would be too much expense and labor for the benefit derived.

Just now the work is pruning. This year's canes are as much as eight and ten feet tall, but the proud and the meek are razed about two feet above ground. Then all those that did their duty this season are cut off at the ground with a hooked knife on the end of a round handle a foot long. Not only these, but all except five or six of the strongest canes per running foot are cut off entirely. If any are to be planted elsewhere or sold for plants, their roots are loosened with a spade; the canes of the past season's growth are pulled out and cut back about a foot for this purpose. They are set in firmly prepared ground without being allowed to dry, by opening a space for them with a spade and tramping the dirt around them.

Growth of Fruiting Spurs.—The vigorous canes that remain for the next crop send out three to five vigorous laterals in the spring. About the time these are nearly shoulder high to a short man the freest growing ones are pinched back to force the growth into fruit spurs which develop from the leaf axils on as many as a dozen of these laterals per cane. The owner says that sometimes this pinching back works and sometimes it doesn't—it is not done very thoroughly. Sometimes the secondary laterals forced out are not fruit buds but wood growth.

The soil is heavy and black—more or less sticky when wet. It doesn't need fertilizer, though a fair coat of barnyard manure was applied just before planting those that are three years old.

When the soil has dried in early summer so that some of it taken from a depth of three or four inches will not stick together when squeezed in the hand, it is full time to irrigate. From that time on, water is supplied every fortnight.

Picking begins about the first of June and continues until well into September. Lighter pickings are taken through October and November.

It is noticeable here that a tremendous lot of new shoots come up in the matted rows through the summer and grow rankly. This waste of plant energy is said not to be so great in the commercial berry producing sections. A system by which this energy could be converted into fruit here would command much attention. Lacking such a system, the next best would be one that would prevent such growth. Who knows?

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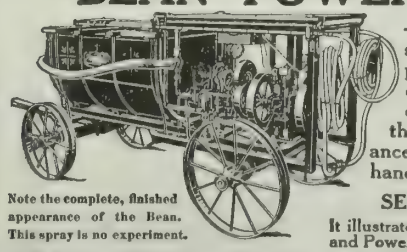
2 BEAN POWER SPRAYERS



—drive the material on at high pressure and have non-rusting ball valves, porcelain-lined cylinders, Bean patented pressure regulators and many other distinctive advantages. On account of their low-down, compact, perfectly balanced construction they are as easily handled on hilly ground as on the level.

Note the complete, finished appearance of the Bean. This spray is no experiment.

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Clingstone Peach Trees

TUSCAN! Ours are the improved Round Tuscans—firmer, more symmetrical and uniform, Finer Grained, less subject to Wind-Fall and Split-pit, and preferred (to the extent of $2 to $5 more a ton) by canners to the oblong Tuscans commonly propagated.

PHILLIPS! We cut our buds from a block of trees that have proven an exceptionally good strain of this variety. Peach trees are always a safe investment—the demand is large, the price firm, and the profit good. What more can you ask?

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TREES TRUE TO NAME. THE SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES

Is Cheap Olive Oil Due to Tariff?

California's 1914 crop of oil olives, valued at over $1,000,000, is rotting on the trees and is doomed to almost complete loss according to Frank Simonds, secretary of the Los Angeles Olive Growers' Association, which we understand is not a co-operative organization but a local packing company.

"The inability of the olive oil manufacturers to contract for the crop this year explains why the growers are helpless with the fruit on the trees," stated Mr. Simonds. "There are two reasons why the manufacturers are incapable of handling the crop, the main one being the low Democratic tariff and the other unprecedented shipments of olive oil from Italy, made possible by that tariff—or lack of tariff.

Fearing the possibility of sooner or later being involved in war, the Italian olive oil producers are making great haste to export all their product to the United States regardless of whether there is a market for it or not. The importations are far larger than the demand. For the fiscal year 1912-13 there were only 5,000,000 gallons imported from foreign countries and from present indications this year the importations will total over 7,000,000 gallons. With such a heavy supply of foreign oil selling at prices which would be ruinous to the California producers, the condition is more serious than it ever has been before in the history of the industry."

Discussing the relation of the low tariff to the present discouraging condition of the olive oil industry, Mr. Simonds stated that three years of Democratic administration have put the industry on its last legs.

"California absolutely cannot compete with foreign countries in the manufacture of olive oil on account of their low wage scale as compared with that in this State," Mr. Simonds continued.

"For the last year or more California producers have been carrying over from 40 to 50 per cent. of their output because they could not dispose of it at profitable prices. To exemplify how serious it is this year I may state that Cailfornia oil has been offered in New York at cost during September, October and November, and then could not be sold."

Mr. Simonds announced that the olive interests of the State are preparing to make a final desperate fight in 1916 for a protective tariff sufficently high to insure the survival of the industry. He admitted that it is realized that only the defeat of the Democratic party would make possible a revision of the tariff program in the interest of California and all American industry. The olive oil factories are keeping a systematic and accurate account of daily expenditures and gathering all important data bearing on the industry, which, it is expected, will be introduced at tariff hearings in 1916. The plea will be made that California has 375,000 acres adapted to the raising of olives and that as there is only 22,000 acres of this area planted, a protective tariff alone can assure the progress of the industry to the point where it can supply the entire consumption of the United States.

The old tariff on olive oil was 40 cents a gallon; the Democratic tariff is 20 cents. What California needs in order to compete with Italy is a 50-cent tariff.

Does this answer the question?

PROPOSES COMMUNITY STUMP-PULLERS.

[Written for PACIFIC RURAL PRESS.]

That the Commercial Club at Sedro-Wooley should buy three hand-stump-pullers and lend them to settlers at a nominal rental is the proposal of C. P. LaPlant, a grading contractor who has lived in Skagit county, Washington, for 25 years. Mr. LaPlant owns nearly 400 acres of land in stumps and trees. He is now clearing part of this and speaks from experience. He has tried every method of removing stumps.

"I do not say that the hand puller is the only machine," remarks Mr. LaPlant, "but for a man who is clearing his own land and has not a team the hand machine is the best. You can pull just as cheap with the hand machine. But of course you have to keep working all the time.

"I can pull any cedar or fir up to two feet, but it doesn't pay. They bring up too much dirt and they have to be bucked after they are out. By splitting them with powder before pulling them, both these troubles are avoided."

Mr. LaPlant, after he has pulled the small stumps, burns them up with all debris before shooting the big stumps. This prevents covering any wood with dirt.

"The trouble with land-clearing," thinks Mr. LaPlant, "is that so many people go at it without knowing how long it will take. Then they get discouraged. I think that if they had a little help such as my plan would give they would take courage and pull through oftener than they do.

"If we can get the people already on the land to make good, then more people will come in of themselves, and they will make good, too.

"The mere fact that a hand puller enables a man to clear his land without the help of a horse or another man is a great thing, even if he should not get the stumps out as quickly or as cheaply as somebody else might by some other method.

"The logged-off land west of the mountains will produce much more money, put into crops for which it is suited, than land in the corn belt. It is worth all that it costs when cleared."

HAVE A LETTER HEAD.

A query recently reached Pacific Rural Press with a letter head in black type as follows:

C. L. CHRISMAN
Grower of Lima Beans,
Ventura, California.

It was printed on good paper and quite impressed us with the up-to-dateness of that grower. While the Pacific Rural Press gives all the attention necessary for each query from a subscriber, regardless of the letter head, we know that in general business the letter head commands respect and attention not accorded to plain paper.

Mitchell NEW LIGHT SIX

NO CAR WILL COMPARE WITH THIS.
45 H. P. Six cylinder 4x5½. 128-inch wheel base.
36x4-inch tires.

$1700
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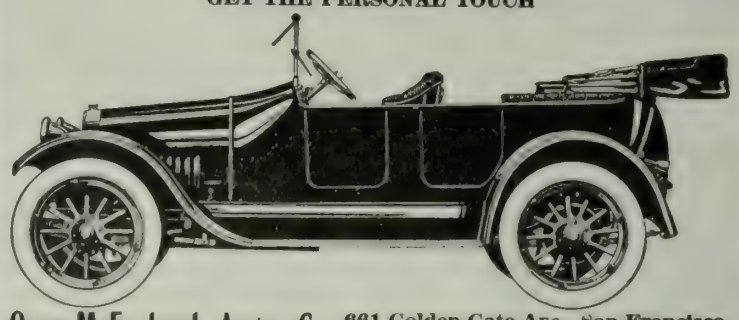
GET THE PERSONAL TOUCH



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Put strength into the soil—put back into it what the crops take out—put it in while the soil is yet capable of utilizing nutriment—and above all put in natural animal fertilizer—the surest of all crop producers.

Write us for the booklet which tells about animal fertilizer.

PURE ANIMAL MATTER AMMONIATES
GOLD BEAR FERTILIZERS
FOR CALIFORNIA SOILS

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is now located at 1235-37 East Sixth St., Los Angeles, and respectfully solicit consignments of all kinds of farm produce, including eggs and poultry. We guarantee to get the highest market price and remit promptly to shippers. A trial shipment solicited. We work on a commission basis, stating to shippers the amounts we receive for produce. We will give you a square deal. Send on your produce. FARMERS' UNION, Inc., of Arroyo Grande, Cal.
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Second Hand PIPE Screw Casing
ALEXANDER PIPE COMPANY
— 254 No. Point Street, San Francisco, Cal. —
501 Clarence St. Los Angeles, Cal.

Organize Farmers for Marketing.

In the following statement Governor Glynn of New York does not say anything particularly new, but the propositions are significant as coming from the head of the most populous commonwealth of the United States:

New York is doing a great work now in educating those who seek to become farmers in the science of farming, but it must go farther than that and make it easy for farmers to increase their holdings and for men who are not farmers to become owners of farms. And the only way in which it can bring this about is to supply the farmer and the intending farmer with some easy method of obtaining credit.

Why the Farmer Gets so Little.—Those in a position to know declare that for every dollar's worth of food which the public buys, the farmer receives only 35 cents. Sixty-five cents of the dollar is absorbed in distribution.

The chief reason for the small percentage which the farmer receives is the fact that he sells as an individual out of touch with the man to whom his products eventually go. To increase the farmer's profits and to decrease the consumer's outlay, the farmer and the consumer must be brought into closer contact. If the farmer continues to sell as an individual, it will be practically impossible to make any progress. The markets where his products are bought are too different and diverse for him to deal personally with the consumer. It is obvious, therefore, that if a personal relationship is to be achieved, it must be attained through the co-operation of many farmers acting as a unit.

What the State Should do About it.—There is little doubt that the facts I have just stated are understood and appreciated by every farmer in the state. Many of them have expressed their keen regret that there is no general movement to form co-operative selling societies among farmers, in order that each member of that co-operative society might dispose of his products to the best advantage. Scarcely a farming community in the state has not at some time or other expressed a desire for such a society. There is a great and growing sentiment throughout the agricultural districts of New York for co-operative organizations which will assume the responsibility of marketing the farm products, but this sentiment must be crystallized and given a concrete expression. Some one with initiative in each community must take it upon himself to organize a co-operative association, and where there is no one man ready to take the task upon himself, the state itself should provide energetic organizers for sections that desire their services.

What Might Be Accomplished.—With co-operative societies receiving the products of each individual farmer, sorting and packing them, arranging them and keeping in close touch with market prices, most of the farmers' difficulties, so far as the consumer is concerned, would disappear. The consumer himself would feel that he was getting his food at the lowest possible price and the farmer would be assured that he was receiving full value for his products. Furthermore, the situation which now exists, where the individual farmer ships goods to a distant market and his neighbor sends to the same distant market for that very product would be at an end. There is doubtless not a single man among my readers unable to cite an instance where a farmer's fruits or vegetables have been shipped out of his community only to return to some neighboring consumer in a few days. The reason for this is obvious. The village grocer cannot depend upon individual farmers for his supplies. He must go to some large market which is supplied by a number of farmers for the certainty that he will secure what he needs.

With co-operative selling associations in each farming community which at all times would have a considerable supply of various farm products on hand, the local grocer would not be compelled to go far afield for what he wanted.

Consumers in the country no less than consumers in the city would find a co-operative selling system of great advantage and the farmer would at last have the satisfaction of knowing that the labor of his hands was receiving the reward that it deserved.

Plant Pears for profit. California Bartlett ripen earlier than Eastern and Northwestern grown pears. During their season they monopolize the markets of the United States and Canada.

Silva-Bergtholdt's
FOOT-HILL GROWN PEAR TREES

have strong, hardy root systems, the foundation of all successful trees.

We have a fine block of Bartlett, Comice, Winter Nelis, Anjou and other varieties. Our buds are cut from selected parent trees.

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It is common to estimate that the quantity of water raised by a single-acting bucket-valve pump per minute, is equal to the number of strokes in one direction per minute, multiplied by the volume traversed by the piston in a single stroke, on the theory that water rises in the pump only when the piston or bucket ascends; but the fact is that the column of water does not cease flowing when the bucket decends, but flows on continuously through the valve in the bucket, so that the discharge of the pump, if it is operated at a high speed, may amount to considerably more than that calculated from the displacement multiplied by the number of single strokes in one direction.

Early lambing will be a great thing for California sheepmen, according to Jos. Connolly of Livermore, who has just returned from his father's ranch, where 110 per cent of lambs were secured with a large flock of ewes last month.

An avocado tree thirty feet high in Napa county on a frostless rocky ledge is reported by Chas. Blom to have set fruit last year for the first time, but did not mature it.

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Buy farm machinery on the reputation of the manufacturer. The Yuba Construction Company has been building its reputation into gold dredges and pumps for the last ten years. It now goes into Yuba Ball Tread Tractors also.

Buy only after the machine has been thoroughly tested by other farmers. The list of Yuba Ball Tread Tractor owners, the kinds of work done, and the length of time each machine has been in service is steadily increasing.

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Gentlemen: Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name ..... *P. O. Box* .....

Town ..... *State* .....

Size of Farm ..... *Acres.* *(Check main crop raised.)*

Fruit ..... *Rice* .....
Grapes ..... *Alfalfa* .....
Grain ..... *Hops* .....
Hay ....

RICE AS CALIFORNIA KNOWS IT.

(Continued from page 617)

vanced in former years that a fine seed-bed was essential in rice-growing on account of its slow germinating habit, has proven a fallacy in the heavy California soils. In fact, it is now considered better to leave the ground in a half-rough condition, only plowing and harrowing once. The necessity for this is brought about by the fact that flooding usually has to be done after planting in order to bring the plant up, and when the seed bed is finely pulverized the soil bakes and crusts over, to the detriment of the young plant.

The seed used most generally in the past has been of the Japanese varieties, as experiments have almost always shown that they are the best suited to California conditions. These produce a short plump grain, but the fact that Italian varieties are three weeks earlier and that prices this year are said to be better for the Italian than for the Japanese kinds, is causing leading growers to consider the Italian varieties for next year's planting, even though the tonnage to the acre is not so great. It may be safely said that no one certain variety has as yet proven itself supreme for California conditions, although it is known positively that many of the late ripening kinds will not do for our conditions.

To secure a uniform stand, seed should be drilled in to a depth of one-half to three-quarters of an inch, as near as practicable. Where conditions allow it, planting should be commenced directly after danger of frosts is over. When this happens between March 15 and April 1, from 80 to 90 pounds of seed should be sown, but where planting is deferred till May 1 to 15, it is better to use but 60 pounds. This is brought about by the fact that when early seeding is practiced the heavier stand has a sufficiently long season to mature, while the later plantings will not mature except in cases of a thinner stand. Rice experts of both this country and the Orient state that the ideal distance apart for each plant is one to every six square inches, but such exactness cannot be attained in field practice as we have it in California.

From the time it is planted till the plant sends out its water roots, it is a dry land plant, but from that time forward it is a water plant and has to be cared for as such. These roots or feelers grow out from the plant instead of downward, as does the root system, so may be easily distinguished.

It is at this stage that the permanent flooding commences, the depth of water varying between two and six inches, the latter depth having been found to be preferable this season, as it greatly aids in early ripening, the thing that all growers are working toward.

To insure even distribution of water, the fields are subdivided into checks varying in size from two to six acres, according to the slope of the land, with earth levees, built moderately low, and having a good wide base in order that harvesting machinery may be run over them. These checks are connected with either board boxes or large pipe in such a manner that the surplus water from one check spills over into its neighboring check and so on over the entire field.

In the fall of the year, usually about the first of October, when the grain is in a tough, doughy stage, the water is drained from the checks, through drainage ditches, which are built especially for that purpose. By the time that the ground has become dry enough to allow of driving over with teams the grain has usually ripened sufficiently to allow of harvesting, which is done with binders. The threshing is done with stationary threshing machines, which are made especially for rice, after which the grain is taken to the rice mills, where the hull is removed and polishing acomplished.

The yield may vary according to the cultural methods employed and other factors which may arise. The past season has been exceedingly good on account of the long-growing season, and therefore some yields have run far in excess of the normal. Certain spots have produced as high as 100 sacks to the acre, but one of the leading growers of the Sacramento valley section states that he secured an average of 50 sacks to the acre, which is likely more than the average for the State would be.

Rice, like all other crops which seem to hold out special inducements for the grower, develops difficulties which must be surmounted, and it would not therefore be fair to our readers to tell only of the bright spots and keep the dark ones covered up, especially when it is within the power of the grower to successfully combat the evils, when the proper methods are pursued.

Rice's worst enemy in this State are the native and foreign water grasses which, if allowed to grow unmolested, quickly make the land worthless for rice culture in a matter of two or three years' time, unless rotation crops are substituted, which allow of plentiful cultivation.

There are many varieties of these grasses, some of which have been brought into the State in the rice seed, and some of which are native plants, whose presence is not ordinarily felt in other lines of farming where continual flooding is not necessary.

At the start of the industry here little attention was paid to these grasses, as experience in the Southern States where rice has been grown for many years did not show them to be a detriment, but the fact that several large fields have been plowed up after seeding, during the past two years on account of the spread of these grasses indicates that they are a real problem at this time.

The spreading of these grasses has been remarkably fast in the larger rice sections as the seed has been carried both by birds, irrigation canals, and by the overflow waters during the winter months.

The methods of control so far practiced most successfully have been, to secure clean seed in the first place, and to keep the fields clean by hand-pulling. When conscientiously followed this method has produced satisfactory results for the season in which it was done, providing, however, that the plants pulled were destroyed through burning. If simply pulled and laid on the levee or ditch banks, the plants immediately take new root and continue to grow and mature, the seed being redistributed over the fields with the water.

As before mentioned, the only way of eradicating grasses permanently is by rotation of other crops, a thing that is only practicable where drainage is sufficiently good to allow of drying the ground off. Under such conditions the land can be dry-farmed till it is again suitable for rice.

It will be seen, therefore, that of all evils the matter of proper drainage is really supreme after a district has become a rice-growing center, and cases may already be seen in this State where land that has never been seeded to rice is so thoroughly saturated with seepage water from adjacent rice fields that the growing of other crops is entirely out of the question.

Under such conditions there is little or no hope of rotation until such time as a permanent and well-maintained drainage system is installed, and it is for that reason that progressive and far-seeing rice-growers are evidencing much apprehension for the future of an industry which should, if rightfully developed, revolutionize farming in many a California district that is today affording little to mankind.

The solution of this problem, like those of the past, will no doubt be found, since the industry has gained too much headway to allow of obstacles to destroy.

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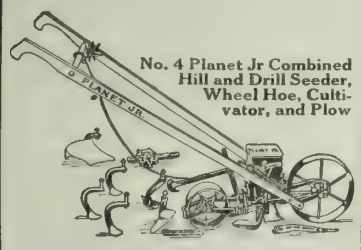

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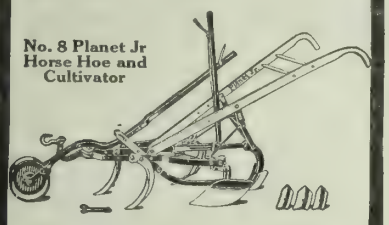

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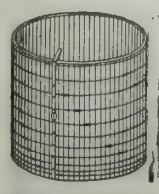

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Farmers Help Frame Credit Law.

"It is necessary to convince the farmers that their interests are suffering severely under present hampering restrictions with respect to all credit facilities, and to convince, also, the general public that consumers are as certain to be benefited as the farmers themselves from any action that increases farm production and makes for the betterment of agriculture generally."

The foregoing drastic impeachment of both the producers and the consumers of American food and clothing is part of the platform on which a committee will work to accomplish the passage of a non-partisan rural credits law to permit farmers to get easier cash loans with which to mature or market their crops.

The committee was appointed at a recent meeting in Washington, D. C., of State grange men, representatives of other farmers' organizations from coast to coast, and farm-paper editors.

At this meeting, the details of the various credits bills now lagging before Congress were explained, and the principles on which they are based.

Since all of them provide for land-mortgage banks, the meeting voted not to obstruct that idea, but to work for the incorporation of a personal credit system like that prevailing in France. Under such a system the farmers' character is capitalized without mortgaging their land. Thus they can borrow money for production purposes, on their own credit alone.

Herbert Quick of Farm and Fireside urged that whatever action be taken should be with a view to permanent betterment of agricultural conditions in this country, and not a mere palliative for the present, which will leave the future to deal with the problem. He strongly advocated legislation to establish a system as nearly like the land-bank system in Germany as conditions in this country will permit.

First Voice of Farmers.—Until the conference began there was danger that the whole question of rural credits would be left solely to the politicians who might do the bidding of the bankers. This meeting indicates that the farmers intend to have a voice in determining how they shall be permitted to use their own credit.

To promote further the personal credit program the conference also adopted a petition to Congress to appoint a special commission, representing both houses, to consider the matter and report to the next Congress when it assembles.

By the discussions of the three days and the resolutions adopted, the state grange leaders have taken the first definite action looking to a general movement to obtain for agriculture the certain benefits that must come from free and adequate credit.

Confidence is felt that the country can be aroused to the importance of the movement and that through the response of the public to the efforts of the committees in charge, Congress can be forced to take the matter up as a great economic question demanding settlement upon a basis of the greatest possible good and not as something to be juggled with by politicians and financiers.

MOORPARKS — WHAT'S WRONG?

[Written for PACIFIC RURAL PRESS]

To get a good crop of Moorpark apricots, thinks Geo. Lowry of Alameda county, just don't prune them. He had some old trees which did not bear well enough to pay for their care. So they were doomed to destruction. But other duties pressed Mr. Lowry and he neglected the orchard a whole year. It bore a good crop. He hated to pull them out then, so another year of neglect passed by and they bore another crop.

But G. E. Merrill, located in the hills of Santa Clara county, on the other hand, has two big unpruned Moorpark trees about 12 years old set near 100 trees of other varieties which averaged three boxes per tree, while the Moorparks bore none. So he thinks Moorparks need pruning.

Another Santa Clara apricot grower, F. G. Wells, once rented seven acres of Moorparks that hadn't been pruned in four years and had rested from their labors during that period. He gave them a good pruning and got a crop. His successor pruned them last winter and had a fine crop this year. The experience of these three men seem to indicate that pruning is not the governing factor —maybe the trees just need a change of treatment—but we would think the trouble is more likely due to weak pollenizing ability. In specially favorable seasons they set fruit—otherwise not. Experience to the contrary will be welcomed.

WHITEWASH AGAIN.

To the Editor: I think I have seen directions for mixing whitewash in your journal but have mislaid the copy so would thank you to give directions for mixing.—J. G. W., Salida.

[If you have been a subscriber for any length of time you certainly have seen the receipt, which we have to publish several times a year. By using the index that we publish every six months for the sole purpose of making the issues of the Pacific Rural Press easily accessible for reference, such information can be gained in a few minutes at home. However, for the benefit of new subscribers we give it space once more. Take a half bushel of unslaked lime, slake it with boiling water, cover during the process to keep in steam, strain the liquid through a fine sieve or strainer, and add to it a peck of salt previously dissolved in warm water, three pounds of ground rice, boiled to a thin paste and stirred in while hot, half a pound of Spanish whiting and one pound of glue, previously dissolved by soaking in cold water and then hanging over fire in a small pot hung in a larger one filled with water. Add five gallons of hot water to mixture, stir well and let it stand for a few days, covered to protect it from dirt. It should be applied hot, for which purpose it can be kept in a portable furnace. A pint of this mixture, if properly applied will cover a square yard and will be almost as serviceable as paint for wood, brick or stone, and is much cheaper.—Editor.]

Walnuts for PROFIT

HAVE YOU WALNUT SOIL?
Why not grow them? No better market present or future for any California product. 70% of walnuts consumed in the U. S. are imported.
OUR FRANQUETTE
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Grafted on native California Black root are late blooming, not frosted and practically immune to blight. See article in Pacific Rural Press of November 7th on our walnut orchard at Morgan Hill. Be sure to see samples of our nuts and investigate our trees before ordering elsewhere.
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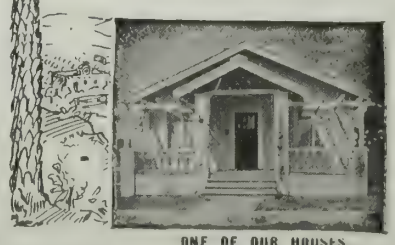

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Mechanical Power on the Farm.

BEGINNERS' AUTO POINTERS.

[Written for PACIFIC RURAL PRESS.]

Do you like the intelligent responsiveness of a spirited horse to the wishes you convey by means of reins and spur and knees and whip? An automobile engine is just as spirited, and as long as you give her the conditions which are definitely known, you can count on the engine having no moods. You can count on her speeding up at your mere suggestion; if you want her to get down and hump her back for a stiff pull through mud or up hill, all that is necessary is to give her the suggestion in one of several ways. She responds to every touch of hand or foot. She will even swim the floods for you. Mr. Skinner rescued folks from the Stockton floods in a Mitchell whose carbureter air intake was covered with a rubber hose whose upper end extended above water. Jim Irving, of Sonoma county, forded Russian River with a Ford, the top of whose radiator was splashed by the water pushed up in front of the car.

Let Machine Run the Engine.—But a brave little engine which pulls your automobile so responsively through hard places is entitled to a vice-versa when you are running down hill. Let the machine run the engine. Turn off the magneto, and leave the clutch in. This keeps the engine going, and the compression makes unnecessary the use of the brake going down even a steep, long hill. At the bottom, turn on the magneto and your engine is already cranked. Some folks turn off the engine and apply the brake till it smokes. But there is no need to use either gasoline or brakes. Remember when you hit a sandy spot or a mud hole or a steep climb that the engine should be given a running start. The sudden addition of such an extra load with no opening of the throttle or lowering of the gear, gives the engine a lot of extra work she will do only if you give her extra momentum and extra gas.

Oiling the Windshield.—Now that the windshield is likely often to be clouded by rain, it will be a great relief to your eyes and your nerves to rub an equal mixture of glycerine and alcohol over the glass before you start on a rainy trip. The water will not obscure the glass then, and you will feel mighty cozy when you look through it at a farmer dripping along in an open wagon; and you will feel for the water-soaked horses.

Starting a Cold Engine.—To start his engine readily on cold mornings, J. Y. Beaty of Sonoma county kills his engine the night before by simply pulling out the priming rod. She stops quickly and easily; but don't use this method until you are through with the machine for the night.

Light Cylinder Oil.—Mr. Beaty accepted advice once from a garage man to use heavier cylinder oil because he said it was better. For awhile, when starting the engine, he would crank and crank and say "Gracious," and get red in the face, and then crank awhile. Copious priming would finally get the engine started. Changing back to light cylinder oil was the satisfactory solution.

Backing Up Hill.—The engine would just as soon have some gasoline all the while she is working; but sometimes the gasoline gets low in the tank and when the machine is climbing a steep hill, the engine is higher than the gasoline in the tank. Then to go up the hill, turn around and back up. This puts the gasoline higher than the engine so it flows freely into the carbureter.

Carry a Tow-rope.—It is wise, nowadays to carry a short tow-rope by which someone may pull you out if you get into a slippery ditch. After being pulled out, if the machine is in running order, throw the clutch in so the engine will be started before unhooking from the other auto. A friend thus rescued a man who had run into a pole and bent his crank so it couldn't be used to turn the engine over.

NEEDS LARGER ENGINE.

To the Editor: If I could always be assured in running a gasoline engine with as little trouble as I have with my "Sampson," I would have no other. But some day when we get a power line on the highway adjacent to us, I guess we will have a motor and lights in the barn and house.

During the two dry years previous to last year a great many people installed pumping plants, some with motors and some with gasoline engines, and many of them are out exposed to the weather, rusting, and are practically in disuse.

When I installed a four h. p. engine to run a three-inch Krogh pump, I thought I was complete, but I find that my pumping plant is not adequate. Just as soon as my pocket-book will admit I am going to install a six h. p. engine with a 4-inch pump and will have shafting so that I can run a bone mill, feed cutter, fanning mill, churn, etc.

Yuba City. B. R. HARWOOD.

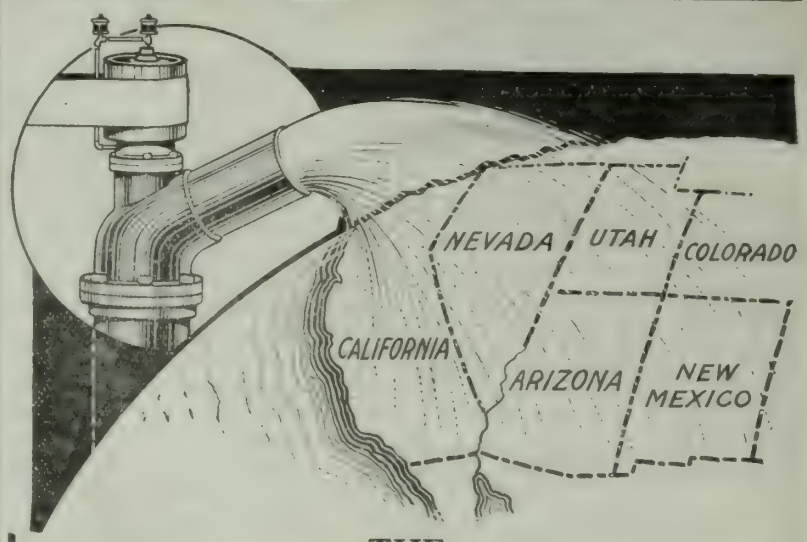
BOY RUNS CIDER ENGINE.

[Written for PACIFIC RURAL PRESS.]

The fourteen year old son of A. F. Baker of Sonoma county runs the 1¾ h. p. gas engine which crushes about 20 boxes of apples per hour for cider. Four boxes are crushed, then the juice is squeezed out of them and four boxes more crushed. A box yields about two gallons which has considerable local demand at 25 cents per gallon. This is far better than letting the apples rot on the ground, as we have seen so many in recent weeks. It gives the boy an education in mechanics and also in business, for he sells the cider. Of course the advantage would become a curse if he learns to drink alcoholic cider.

But there is no need to allow it to ferment. It may be canned like fruit, and if thoroughly sterilized, will not "work." Some of the fresh flavor is lost but it makes good drinking for winter evenings anyway.

When the new process for freezing the water out of cider is commercialized, we can have sweet cider in season and out of season with all the flavor of the freshly made product.



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Throughout the West, this pump is in evidence—on all kinds of ranches, out on the desert, up in the mountain districts—in fact, wherever a good, reliable, all-round efficient pump is demanded. The Layne & Bowler Pump is constructed in a manner to incorporate as few and simple parts as possible. Positively the cheapest water is produced. It's the pump you should install.

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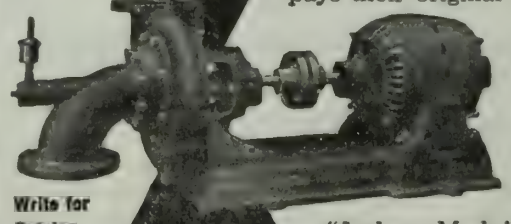

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CESSPOOL AND POWER.

To the Editor: Please give me the comparative merits between a septic tank and cesspool for country residence.

How far should a cesspool be located from the well providing ground slopes from the well? Please give details of necessary equipment (except wiring) for lighting a seven room house and perhaps a couple of lights in barn, gasoline engine is already provided.

What is the average life of a gasoline engine? What the average life of a dynamo?—G. W. K., Sebastopol.

[Answered by E. P. Gibson of the General Electric Company of San Francisco.]

There is no reason why a cesspool should be used when the septic tank has given such satisfactory results. A tank correct in design and installation has every advantage over the cesspool. When a septic tank does not operate satisfactorily the difficulty can be found in these two factors. There are several government publications on this subject and these can be referred to rather than go into lengthy detail in this paragraph.

Although the ground level may slope from the well, it is possible that there is an underground gravel stratum that has its slope from the cesspool. This could be determined by a test hole. In any event with a sandy soil it is not practicable to place the cesspool within one hundred feet of the well. Consider the proposition carefully before a cesspool is dug. Rather pay twice the amount for the septic tank than pay four times the amount in doctor's bills.

Lighting Farm Homes.—In laying out a lighting scheme for the farm home it is essential to first know how much power is needed to run all the lights at once or to know the maximum load that must be placed on the plant. For a seven-room farm house let us place the lights as follows: One on porch, two in parlor, two in sitting room, two in dining room, one in kitchen, one in each of three bedrooms, one in bath, one in cellar, two in the barn. By using 25 watt Mazda lights (24 candlepower) a generator with a capacity of one-half kilowatt is sufficiently large. This is equivalent to about 3-4 horse-power. A storage battery set must be used and the lights run from the batteries, otherwise each explosion of the engine will cause an impulse on the belt, resulting in a flicker in the lights. In order to make the connections correct an electrical device is used that is very simple in operation. The Electric Storage Battery Company make a complete unit in the way of storage batteries and switchboard containing this relay, switches, etc., in fact everything necessary to operate the plant. This complete unit can be purchased for approximately $240,00. The electric generator will cost about $40.00. Total cost of plant, wiring not included, $280.00.

Life Of Gas Engines.—The life of an engine depends on the care it is given, the quality of material and workmanship used in its construction. An average figure for calculation of depreciation can be set at eight years.

Life Of Electric Generator.—The life of a generator depends on the same factors as the engine. Running at normal load the life of the generator should be from 15 to 20 years, although some small units 25 years old are operating the same today as when they were purchased.

WHERE TO BUY CRUDE OIL.

To the Editor: In your issue of December 5, I notice in the article "Swine Growing on a Fruit Ranch" that these people use crude oil in their pens. For some time I have tried to buy crude oil at both the Standard and the Associated Oil Stations here, but they say that according to the laws of the State Railroad Commission they are not allowed to sell it. Will you please advise me where I can buy crude oil and at what cost?—P. C. E., Patterson.

[Any creamery, laundry, gas plant, or other establishment using steam for power should be able to supply you with the small amounts that you would require. If there are no such plants at Patterson we would suggest that you put an empty barrel into your wagon and drive to Newman, where we believe the local creamery will supply you. If not convenient to do that take empty oil cans instead. These latter might be shipped by rail. The matter of cost will be entirely regulated by what the seller believes it to be worth for his trouble, etc., but in any case it should not be over 10 cents a gallon and we have bought it for much less.—Editor.]

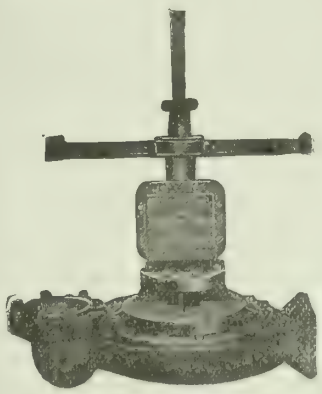
OLD LUMBER FOR SILO.

To the Editor: I have about 2,000 feet of hard pine flooring which was recently taken from a building. The boards are in good condition. I have been planning to use them in the construction of a silo. By putting a heavy coat of cement on the inside, I hope to make it air tight. Do you think the plan is practicable and if so how would you build it?—I. P. C., Lompoc.

[We have never seen the plan tried out and therefore hesitate about advising. It is certain, however, that you cannot get the cement to stick to the wood unless you have first applied a course of wire lath to the boards, or some other similar material with a rough face. If that were done we doubt whether it would be satisfactory as the shrinking and swelling of the boards at different intervals would, we believe, crack the cement layer on the inside. In that case your wall would not be air-tight and therefore of little value for silage. We should prefer using the lumber for some other purpose and buy a new silo, and in that way not take any chances on defective building. However you understand that this is only our theory of the thing. If other subscribers have had experience with such an undertaking we should be glad to hear from them.—Editor.]

Build a shed in the calf lot for protection from the winter storms, which are now starting. The same shelter will do a lot of good in the summer. If we are to have good cows we must take care of them with small things, the same way as a mother takes care of her baby.

The KROGH Vertical Pumps



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Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

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By E. J. WICKSON, A.M.,
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is undoubtedly the best reference book, written by the highest authority on the matters treated, that has ever been published, and should be in the hands of every California farmer.

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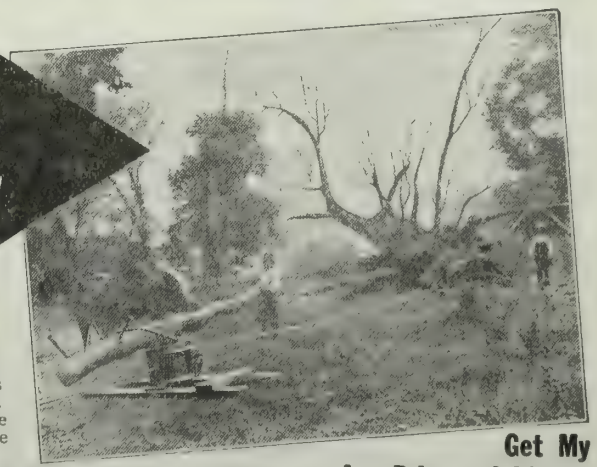
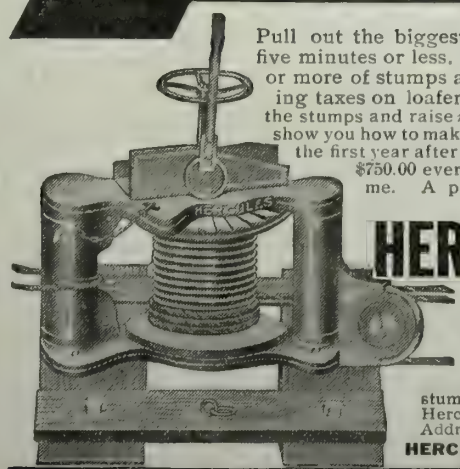


Pull out the biggest stump in five minutes or less. Pull out an acre or more of stumps a day. Stop paying taxes on loafer land. Clear out the stumps and raise *money* crops. Let me show you how to make $1280.00 on 40 acres the first year after stumps are out—and $750.00 every year after. Write me. A postal will do. The



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has the pulling power of a locomotive. It is the only *all steel—triple power* puller made. No stump can resist it. Has many features—self or stump anchoring, double safety ratchets, low down construction—all parts turned and polished for light draft.

Send in your name now for best book published about stump pulling. Shows many fine photos and letters sent in by Hercules owners. My special price will save you a lot of money. Address, B. A. Fuller, President.

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My special price will please you. Hurry up to make sure of this price proposition. Only a few Hercules pullers left at this figure. 30 days trial—3 year guarantee. Any broken casting replaced, within 3 years—whether the breakage was your fault or fault of machine. Write me NOW on a postal.

Agricultural Review

DECIDUOUS FRUITS AND NUTS.

According to Horticultural Commissioner Rutherford, of Stanislaus county, now is the proper time to spray for peach blight and other insect pests. He is recommending a lime-sulphur spray for this purpose.

More than 4,000 acres of fruit land lying along the railroad between Colfax and Grass Valley have been purchased by the Buena Vista Farms company, who plan on settling the land with Norwegians and Swedish settlers.

Practically 92 per cent of the deciduous fruit shipments made over the Union Pacific lines this season have reached market on schedule time, which is 138 hours to Chicago. There were 600 trans handled during the year.

In order to facilitate the work of the Fresno county horticultural commissioner, the supervisors of that county have passed an ordinance requiring that all persons or corporations who offer nursery stock for sale must register with the county horticultural commissioner.

According to R. M. Hargrave of the Richland Walnut association, Orange county produced about 40 per cent of the walnut crop of Southern California this year. While the crop was only about 40 per cent of a full crop, prices were exceptionally good and the only nuts not marketed as yet are the Jumbo grades which are to be sold in cartons.

That the Loomis Fruit Growers association were well pleased with their officers' work the past season is evident from the fact that they reelected the following at a meeting held last week: President, W. H. Tudsbury; vice-president, L. J. Kenney; secretary, R. M. Nixon; manager, E. L. Rippey; bookkeeper, Lee Tudsbury; directors, J. H. Ferguson, N. Jensen, R. T. Cook and H. N. Hanson.

All of the pear and apple orchards in Sutter county have been inspected for pear blight, and growers have been notified to endeavor to obliterate the blight as soon as possible, according to County Horticultural Commissioner H. P. Stabler. The commissioner is also making a campaign against Russian thistle and Johnson grass, which are said to have been destructive in many parts of the county.

A contract has been let by the Diamond Match company for the planting of 90 acres of their lands near Chico to prunes this season.

A plan is being set on foot by the Reno Commercial Club, of Reno, Nevada, to establish a cannery at that place in the near future. It is proposed to can many other things, peas, beans, asparagus, tomatoes and other vegetables and fruit raised in that vicinity.

CITRUS AND SEMI-TROPICAL.

A report from Nordhoff states that the orange crop in Ojai valley is larger than that of any previous year and the prospects are that the heaviest crop in the history of the valley will be harvested.

Advices from Fresno state that while the frosts of last week there were rather heavy there has been no damage to citrus fruits although the olive crop still on the trees has been slightly damaged.

It has been estimated that citrus fruit growers in the southern part of the State have a least one million orchard heaters, with which to fight frost this year, should the need arise. To date no damages from frosts have been reported from any of the citrus districts.

In pulling out orange trees that were planted in Riverside county in 1880, it has been found that the tap roots were 14 to 18 feet long which do not have a particle of bark and show no signs of flowing sap whatever. Neither were any feeder roots found.

According to estimates made by fruit men in the Fullerton district of Orange county there will not be more than 80 per cent of a normal navel orange crop there this year. It is said that Valencias will run about 85 per cent of an average crop and that sweets and St. Michaels will not be more than 65 per cent.

A report from Porterville states that the cannery of the Tulare county Growers' association is still busily engaged with the pickling of the olive crop of that section and do not expect to finish before the first of the year. Early estimates were that not more than 100 tons would be packed, but it now appears evident that 160 tons will be handled.

In his monthly report County Horticultural Commissioner Earle Mills of Butte county reports finding some damage to olive orchards there from thrips. All pickling companies have had their attention called to the county ordinance which prohibits the moving of picking boxes, ladders, etc., from one orchard to another unless they are previously disinfected.

Two members of the Board of Chemistry have recently been in the olive districts adjacent to Oroville obtaining various samples of olives that are to be analyzed and tested to ascertain their oil content. Local growers here believe that the department is considering the formulation of a test for olive maturity along similar lines to the one now in operation affecting oranges.

Although definite figures on the percentage of rejected fruit in the Porterville packing houses are not yet available, reports from the various packing houses there indicate that 85 per cent of the oranges packed there so far have packed out extra fancy. Present indications are that the crop will be about 105 per cent and that about 5,300 carloads will be shipped this season.

With the beginning of shipments from Riverside and San Bernardino sections, orange packing is now under way in all citrus districts of the State. Lemons are reported to be moving out steadily from Riverside and while the rains of last week kept pickers from the groves in the Redland district the total shipments up to December 3 were 48 carloads of oranges.

On account of recent rains which have made it impossible to pick oranges in the Lindsay district the past week, shipments were of necessity cut down. Up to December 11 there had been 1,300 carloads shipped and with 200 carloads then in the packing houses the total picked was about 1,500 cars. Estimates place the number of oranges on the trees at about 800 carloads.

Two large olive planting undertakings are to be started this year in the Sacramento valley. One of these will be near Oroville on 320 acres of land owned by the Gold Run Olive company, who are reported to have contracted for 19,000 olive trees from a local nurseryman, to be delivered during the next five years. The other is a 640-acre tract of land in Yuba county which was recently purchased by Los Angeles capitalists. It is planned to plant one-third of this latter holding to olives each year for the next three years.

BERRY AND VEGETABLE NEWS.

With the news that the Texas onion crop is practically a failure, onion growers in the Lompoc section have been hurrying to harvest their crop, which had been regarded as useless before on account of prices being so poor. During the past two weeks the prices raised from 35 cents a sack to one dollar. The recent rains have complicated harvesting the 40,000 sacks still in the ground.

According to a local agent of one of the large valley fruit companies in the Imperial valley the acreage to be planted to cantaloupes there in 1915 will be the greatest Imperial valley has ever produced. Nine thousand acres have already been signed up which is 2,000 acres more than the total acreage this year.

C. L. Grimston of Oakdale has been shipping large quantities of ripe tomatoes to the San Francisco market during the past couple of weeks and is authority for the statement that farmers in that section can raise good winter tomatoes by putting an acre or two under cover. The last

Classified Advertisements

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LAND FOR SALE.

FOR SALE—Two 160-acre Sacramento Valley alfalfa and hog ranches, 1½ miles apart, 7 miles from large town located on 3 railroads. Extra well equipped with buildings, fencing, etc. 75 acres in alfalfa. Free canal water. Will exchange one or both for olive, nut or fruit ranch or ranches, or sell on easy terms. Am not a hog man. Write owner F. L. Darrow, 1605 Telegraph Ave., Oakland, Cal.

A BARGAIN—110 acres land in Watsonville district. Will raise corn, beans, potatoes, hay. Also apples and apricots. Springs on land. No irrigation required. Fine climate. Six miles to railroads. Price, $35.00 per acre. $1500 cash, balance, terms. A. H. Knox, Palo Alto, Calif.

FOR SALE—Good dairy farm, half way between Crows Landing and Newman. Sixty acres, all in alfalfa, forty-cow dairy barn, tank house, six-room house, plenty water, well fenced and divided into six fields. Will sell for $225 per acre. J. V. Alvas, R. 1, Box 40, Crows Landing, Cal.

160-ACRE MOUNTAIN RANCH, Tulare county, near Mt. Whitney. Power plant, mail service, school, plenty of water could be developed; enough oak wood to more than pay for place. $1600 cash. Mrs. C. Clayton, Visalia.

200 ACRES FOR SALE, eight miles west of Lodi, joining Brack Station, 40 acres ten-year Tokay; 90 acres wine grapes, 7 and 10 years old; balance hay and pasture. $225 per acre. Terms. T. H. Beckman, Lodi.

TO LEASE FOR 5 YEARS—Alfalfa land, 27 acres, under Oakdale irrigation ditch. New house, barn and well. Apply F. R. Grosscup, 1278 Market St., Room 202, San Francisco.

$8000 IN BEAUTIFUL SARATOGA foothills. Prune ranch, improved property. Woman going East will exchange part value for good bare land. R. F. D., 33, Saratoga.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg. San Francisco.

FOR RENT—300 acres of alfalfa land on Dixon Ridge abundance of water for irrigation. Apply, J. H. Glide, Dixon, Cal.

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SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 306-8 Howard St., San Francisco.

REBUILT GAS ENGINES sold for 50 per cent of their new value; cylinders rebored, new pistons and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

"SMITHS' PAY THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY YOUR APPLES direct from grower. Bellflowers, Newtowns, Langford Seedlings, Missouri Pippins. Prices on request. Edward A. Hall, Watsonville, Cal.

FOR SALE—Baled Alfalfa Hay in carload lots. Write for prices. V. L. Wiser, Gridley, Cal., R. F. D., No. 1.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 3, San Francisco.

THOROUGHBRED BELGIAN BUCKS and Does for sale. Geo. B. Vawter, Arbuckle, Cal.

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GRAFTED WALNUT AND PAPER-SHELL PECANS.—Exclusive propagators of Tribble Mayette, Kerr Parisienne, and Improved Franquette. All walnut grafts taken from our bearing trees. Finest trees in the State. Eureka, Wiltz, San Jose Mayette, Concord and other varieties. Bartlett Pear on Blight Proof Root. Olives, fruit trees, etc. Reduced prices. New list ready. Tribble Nurseries, Elk Grove, Cal.

GRAFTED FRANQUETTE WALNUTS—Our nuts bring $100 more per ton than the best Santa Barbara seedlings, and our Royal root grows 50 per cent faster than the average California root. It took us ten years to develop this combination. It is at your immediate disposal. Write us for number you need. Catalogue and price on application. Imperial Walnut Nurseries, R. D. 7, San Jose, Cal.

IT WILL PAY you to let me figure with you on large or small plantings of Apples, Pears, Apricots, Prunes, Peaches, Strawberries, Logans, Blacks, Currants, Gooseberries, etc. Send list of requirements. To secure mailing lists, 12 deciduous fruit trees for $2.50—your selection. 100 Strawberries for $1.00. All prepaid. H. A. Hyde, Nurseryman, Watsonville, Cal.

MISSION OLIVE TREES—Will be two years old next March. To be absolutely sure of getting Missions, I only propagate from my own trees, raised thirty years ago. Also cuttings from same trees for sale. W. A. Hayne, Box 461, Marysville.

CALIFORNIA GROWN Sudan Grass Seed. I have a limited amount of this seed. Until sold, will fill orders less than ten pounds for $1.00 per pound; over 10 lbs, 90c per pound. Delivered. D. W. Parker, Roseville, Cal.

PLANT RUSSIAN RIVER non-irrigated trees. More hardy. Better root system. Self-reliant; didn't have to be weaned. Got the go—you get results. Price list, all kinds, mailed on application. Miller & Gobbi, Healdsburg, Calif.

WALNUT TREES—Late blight-resisting varieties, grafted and budded on California black and hybrid roots. Eureka, Franquette, Mayette, Neffs Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks Building, Stockton, Cal.

FOR SALE—Several hundred choice Eureka Walnut trees on Northern black root. Sizes from four to ten. Prices reasonable. James F. Gooch, Riviera, Cal

FAMOUS ST. REGIS EVER-BEARING Red Raspberries, Strawberries, Blackberries. Postage paid. Old Hickory Supply Co., Dept. 3, Capitola.

BEFORE YOU PLANT OLIVES, cactus, or rhubarb, send for my free booklet. Bishop's Nursery, Highland, Cal.

MUIR AND ELBERTA PEACH trees. $5 per hundred. N. M. Cunningham, Red Bluff, Cal.

BERRY PLANTS, Rhubarb, Cacti.—Send today for price list. Louis F. Scribner, R. 2, Pasadena, Cal.

I HAVE FOR SALE Seed of Black Winter Emmer, Spring Emmer and Rye. Albert Rosman, Davis, Cal.

QUALITY TREES—Burbank Cactus. Cash Nurseries, Sebastopol, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

WANTED.

WANTED—Position as superintendent. Advertiser has had many years of practical experience in fruit, dairy and alfalfa farming, with all kinds of labor; references. Room 707, Hotel Alta, San Francisco.

FIRST CLASS Ranch Superintendent is open for engagement. Many years' successful experience in live stock and general ranching. Excellent references. Box H., this office.

DAIRYMAN with many years' experience, wishes to run dairy on shares. Alfalfa preferred. Best references. Box 74, Pacific Rural Press.

PRACTICAL HORTICULTURIST desires position as superintendent; also experienced and competent in general farming. Box G, this office.

OPPORTUNITY is wanted for boy to work in the country on ranch. Address Guardian, 2344 Sutter St., San Francisco, Cal.

ACTIVE JAPANESE.—Agricultural College graduate, seeks opportunity to work on seed ranch, nursery, or orchard. Ishida, 1760 Post St., San Francisco.

PARTNER WANTED for fruit and poultry ranch. Have income place with suitable buildings. R. 1, Box 243, Petaluma, Calif.

EXPERIENCED ORCHARDIST wishes place as foreman or superintendent. Also familiar with general farming and dairying. Address, Box 4, this office.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

BEES AND HONEY.

BEE-KEEPING pays big. Price list bees, instruction books free. Samples and prices pure California honey, ten cents. Spencer Apiaries Co., Box 12, Nordhoff, Cal.

shipments reported netted him 65 cents a box.

H. H. Newell of Porterville reports that he expects to make $1,000 an acre from his strawberries this year. He is still marketing berries in the local markets and they are said to be fine large ones.

The Sebastopol Berry Growers' Association, incorporated, held a meeting this week for the purpose of submitting a proposition to the members of bonding the organization, the moneys from which would be used in the erection of a new building to take the place of the one destroyed by fire a few months ago. This association brings about $142,000 a year to berry growers in that section.

GENERAL FARM CROPS.

According to statistics recently compiled there have been 225,000 tons of barley exported from the Stockton district this season, up to December 1. The total amounts held in warehouses at that time was said to be 28,958 tons in Stockton, 78,243 tons at Port Costa, and 5,264 tons in San Francisco. This is considerably more than was stored at these points in 1913, but later advices from dealers in San Francisco are to the effect that the market will be well cleaned up before the next crop is harvested on account of the amounts used in seeding and for feed.

A new warehouse is being built at Richvale which with the one already there will furnish room for the storing of 100,000 bags of rice. The present offering for rice is two cents a pound in that district.

Rice growing is attracting a lot ot attention in the southern part of the San Joaquin Valley according to dispatches from various points, and during the next year it is expected that this year's crop will be materially increased. One report says that 100 acres south of Kerman will be planted next year on account of the profits secured from a 10-acre field this year.

A plan is being formulated by the temporary directors of the newly organized Sonoma Hop Growers' association by which they hope to incorporate the organization for $500,000, divided into 50,000 shares at $10 a share. The plan is to finance the organization in such a manner that they can better control prices received for their crops. A report from Oregon states that buyers are attempting to contract for next year's crop now in order to frustrate plans of the coast organization.

In his monthly report, County Horticultural Commissioner F. W. Waite of Imperial county says that as sudan grass belongs to the same family as the sorghums, and that it resembles Johnson grass so closely he doubts the wisdom of planting that grass in the Imperial valley as there is danger of introducting Johnson grass and he can see no advantages for it over other sorghums which have proven satisfactory in past years.

The general quality of the bean crop around Stockton is said to have averaged well the past year and while the crop was larger than normal, it was not so large as had been anticipated. Pinks especially have been disappointing and much short of early predictions.

Creditable honey displays are to be shown from both Stanislaus and Ventura counties at the Panama-Pacific International Exposition, according to late advices from those sections.

PLANS FOR THE DRAFT HORSE SALE.

[Written for PACIFIC RURAL PRESS]

After three months' preparatory work in framing a workable plan for the holding of annual auction sales of purebred draft horses, the directors of the California Draft Horse Breeders' Association has just perfected the final plans for the first of these sales.

At a meeting held in San Francisco this week it was definitely decided to hold the sale at the University Farm at Davis, February 24. That place was selected on account of it being easily accessible to buyers from all parts of the State and the further offer of the University to aid the sale by furnishing suitable stabling room free of charge and feed at a moderate figure—together with the other advantages at hand made the location ideal for the purpose. The date decided upon has been found to be the best time of the year for selling horses as it is then that most breeders are purchasing stock for breeding purposes.

It developed at the meeting that several large breeders have already signified their willingness to consign both mares and stallions, the total number of which amounts to over 20 head. Included in this number is the grand champion Shire stallion at the last State Fair which indicates that breeders are firm in their intention to make the sale high in quality. The plan outlined for defraying the expense of the sale, such as publicity and auctioneer fees, is to allow each consignor to place a reserve price on each animal consigned, and to advance eight per cent of that price to the treasury of the assosiation for the payment of bills contracted for in the above manner. This eight per cent will cover the entire cost of holding the sale and will be readily recognized as a very small charge by all horse-men, in fact much less than the usual cost, and this factor alone should appeal to every horse-owner with stock for sale.

Upon this plan we feel safe in saying that the inauguration of these sales willl be the biggest single thing ever attempted for the welfare of the horse industry in the State, as it will establish market values for purebred animals and provide a condition that will allow of horses being sold for their actual worth at definite times.

In view of the fact that a catalogue is to be issued some time before the sale it is imperative that everyone wishing to take advantage of the opportunity should send a list of intended consignments to the secretary at once and with that idea in mind the directors are having prepared application blanks which will be sent to every purebred horse breeder in the State.

Special importance is placed upon the advantages to be derived from this sale to the community horse breeders' associations who desire a change of horses, as it will allow an opportunity of disposing of their stallions at a cost of eight per cent and furnish them a fine selection in purchasing new ones.

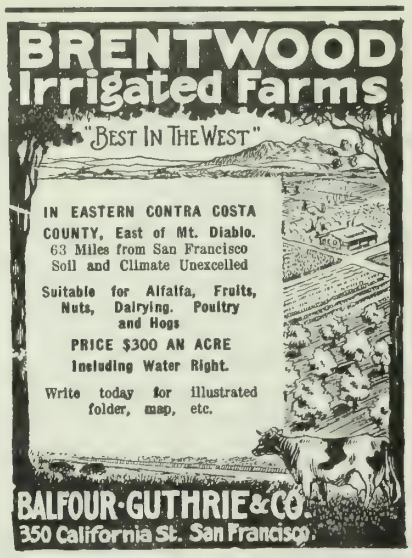
The directors are working hard to carry out the above plans in the quickest possible time and should have the hearty support of every breeder in the State. If you have sound, purebred draft horses to sell get in touch with the secretary, J. I. Thompson, at Davis, at once, stating the number of animals to be consigned and the reserve price to be placed on each.

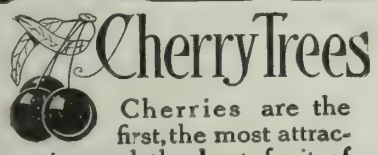
ERROR ON TRACTOR COSTS.

Last week a decimal point got out of place in our "Tractor Plowing Costs" article making it $8.16 per acre instead of $0.816. The manufacturers of Caterpillars say that, "Of course, if a farmer checks over the figures for himself he will see that this is an error, but many readers no doubt will jump at conclusions, and the cost of $8.16 per acre would surely give prospective Caterpillar purchasers an awful scare."

Don't hesitate to borrow a good idea. About half the ideas and thoughts in the world are second-handed, anyhow. It's just as much of a distinction to put an old idea to a profitable and legitimate end as it is to be sponsor for a new one.—Ex.

Norman B. Miller Co. San Francisco, Cal
503 MARKET STREET





Cherries are the first, the most attractive and the best fruit of the summer season. This, together with the fact that they are very profitable, yielding from $400 to $600 an acre, makes them a good "buy" for any fruit grower in position to raise them.

Our block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.

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UNITED FRUIT CO.
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CHUBBUCK'S IDEAL GOPHER TRAP
THE TRAP THAT GETS THE GOPHER.
The principle is correct. Every time you go after the gopher with the Ideal you get him. The New Price Is 50c Worth More.

..Mr. J. E. Thorp, Secretary of the California Jersey Breeders' Association, has this to say: "Your Ideal Gopher Trap was given a thorough trial on a huge gopher that I could not get with other traps, nor could I seem to get him with the cats nor by flooding. I used your trap as directed, and to my agreeable surprise caught the big fellow the first time. I have used it since with equal success."

If your dealer cannot supply you, we will send you one, postpaid, upon receipt of price. Money returned if Trap is not satisfactory.

E. J. CHUBBUCK COMPANY, Exclusive Distributors
731 MARKET STREET, SAN FRANCISCO, CAL.

Milking Machine Experiences.

[Written for PACIFIC RURAL PRESS]

The long standing prejudice against mechanical milkers is gradually being overcome in many parts of the State, where either through labor troubles or a desire on the part of dairymen to attend to their own milking the machines have been installed and run in a successful manner.

In the district adjacent to Gridley, Butte county, there are several dairies that have been successfully using milking machines and to quote George Tranter, the oldest user in the district, "if I had to go back to hand milking I'd quit the dairy business."

It is over two and a half years ago now since Mr. Tranter first installed the machines and during that time he states that he hasn't milked by hand but two or three times, when the power was shut off, and the machines could not be run on that account.

Three units are used on this place, the 20 cows milked in an hour's time by one man, with the aid of Mr. Tranter's son who helps in the stripping. Asked as to the advisability of stripping, Mr. Tranter stated that he always stripped the cows, but found that many of the easy milking cows gave practically all of their milk down for the machine.

When questioned concerning the prospects of harming the cows' udders through the use of the machines, it was pointed out that many of the cows now being milked were on the ranch when the machines were first purchased. Without exception these cows had as good udders and teats as any in the herd, and we further found that heifers which have been broken to the machines since coming fresh with their first calves had not been harmed in this respect.

To further substantiate this claim, he told of two heifers which gave bloody milk when first coming fresh last year. The machines were used on them the same as on the other cows, the milk being fed to the hogs, and after a week's time instead of the condition growing worse as would be expected if the machines were harmful, the flow of bloody milk entirely disappeared and since that time no evidence of bloody milk has been found.

From a sanitary standpoint Mr. Tranter has great faith in the machines, citing an instance where the local cheese factory, claimed that the milk from dairies using the machines was far cleaner than that coming from hand-milked cows.

The cost of maintenance is very light, as the only parts that have to be replaced from time to time are the rubber teat cups and hose, a two horse power electric motor furnishing all of the power that is necessary.

The work of washing and sterilizing is also very simple, the machines and rubber parts first being washed in cold water and then thoroughly stedilized with steam from the small boiler in the milk house.

On the H. E. Snyder ranch in the same district four units of the mechanical milker have been in use for the past six or seven months, where the results have been much the same as on the Tranter ranch.

It has been found on the latter named ranch that where cows giving an ordinary flow of milk are being handled one man can take care of three machines, but in case heavy producing cows are being milked four units can be handled, as in the latter case the machines take longer to milk each cow, thereby allowing the operator more time for stripping and the changing of the machines from one cow to the other.

None of the cows on this ranch have so far shown any ill effects from having been milked with the machines, in fact it is the idea of the owner that cows having tender teats do better with machine milking than with hand milking, as the machines keep the teats soft.

The one important point that every dairyman operating the machines points out most emphatically is that they are a machine after all and should be taken care of in the same manner that one would expect to take care of any other piece of farm machinery.

There seems to be little doubt but that more machines will be used in all parts of the State, especially by the dairyman who wish to be independent of the hired help proposition.

GOOD FEEDING PAYS.

[Written for PACIFIC RURAL PRESS.]

A cow that is worth keeping is worth keeping well, is a motto all dairymen should keep constantly in mind, according to L. Boot of Orland, who has had the truth of the thing brought home to him in a most forcible manner.

When he purchased his present ranch he also purchased the Jersey cows belonging to the former owner. There were 20 of these cows, all of which were being fed wild dry feed, some straw and a very little alfalfa hay.

At that time the receipts from butter fat were $2 a day from the entire herd, but in two weeks' time after Mr. Boot had taken possession, the same cows turned on to alfalfa pasture and fed alfalfa hay, produced $6 worth of fat a day and inside of a month had brought the revenue up to $8 a day.

That was two years ago and since that time the average production for 34 head has been brought up to one pound of fat a day.

In doing this feed has never been spared, although so far only alfalfa hay and pasture have been used.

In order to still further increase the average production, a registered Jersey bull is being used, Mr. Boot having found by experience that the better bred cow is most apt to produce heavily at the milk pail.

The old saying that it is the tame bull who kills its owner is true. No experienced cattle man will trust a bull, no matter how gentle he may appear to be. Put him in a corral and let him alone except to turn him into an adjacent corral at breeding times.

Breeders should advertise in those journals holding an enviable reputation for honesty with their subscribers. A poorly pleased subscriber is never a good buyer.

The Strength of STILETTO

Protect your pocket by using to the utmost the full protective strength of that word —STILETTO—

It is stamped on countless things you buy—Tools, Cutlery, Garden Implements, Farm Implements, Paints, Hardware—and everything so stamped is absolutely the very best of its kind—it is the stamp of Quality.

—STILETTO— is to merchandise what the mint mark is to a coin—it is the sovereign symbol of value—a guarantee of worth.

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Hillcrest Stock Farm
Breeder of Shorthorn Cattle, French Merino and Shropshire Sheep.
DAVIS, CAL. T. S. GLIDE, Prop.

At 1914 State Fair our Shorthorns took first prize in every class we entered except two, and in these were beaten only by stock of our blood. We took all the herd prizes, first and second prizes in produce of cow and first in get of sire.

KING LANCASTER, 3 times Grand Champion

Below is a list of our Grand Champion bulls for the last eleven years—a list that will stand for quite awhile:

1904—Hillcrest Hero
1905-1906—King Edward (Also Grand Champion World's Fair at Portland.)
1908—King of Greenwood
1909, 1910, 1911—King Lancaster
1912—Greenwood Knight
1913—Greenwood Knight
1914—Greenwood King

All except the first two of the list were bred by us. We have beaten a number of bulls that were bought in the East at prices ranging from $500 to $3000 and brought out here to beat us.
Range raised young bulls for sale, single or carload lots.

2-YR. OLD SHIRE STALLION FOR SALE

SEVERN DONALD 13957 by Severn Pilot 11587
DAM RIO VISTA BELLE 13100 by Stuntney Fen Duke 6399

This young horse weighs 1700 lbs. Stands over 16 hands. He will make a horse weighing a ton or more. His sire weighs 2100 and his dam 1900. This colt and his sire won the California Stallion Registration Board's Special Prize at 1914 State Fair.

For further particulars write

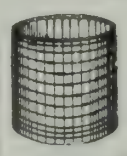
J. McCORMACK, Rio Vista, California

60 HEAD-- POLAND CHINA PIGS FOR SALE --60 HEAD

Both Large and Medium Type

Ready for Delivery January 15. Ten weeks to three months old. Prices reasonable and will guarantee to please or refund your money.

W. A. YOUNG, LODI, CALIF.



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I sell to the consumer. Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon Tanks, Spraying Tanks. Independent.

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The Big Red Bacon and Block Hog.
Send for prices and circulars.
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Teachers Receive From $70 to $150 Per Month and Have a Pleasant Occupation - Free Catalog
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Increasing the Meat Supply.

In commenting upon the meat supply of the United States, in his latest annual report, Secretary Houston, of the Dep't of Agriculture, says that in cattle, sheep, and hogs there has been an absolute decline—in cattle, from the census year of 1899 to that of 1909, of from 50,000,000 head to 41,000,000; in sheep of from 61,000,000 to 52,000,000; in hogs of from 63,000,000 to 58,000,000. Since 1909 the tendency has been downward, and yet during the period since 1899 the population has increased over 20,000,000. This situation exists not in a crowded country, but in one which is still in a measure being pioneered, in one which, with 935,000,000 acres of arable land, has only 400,000,000 or 45 per cent, under cultivation, and in one in which the population per square mile does not exceed 31 and ranges from 0.7 persons in Nevada to 508 in Rhode Island.

It is evident that we have been considering the meat supply of the Nation too exclusively in terms of the big cattle ranch and of beef animals. Obviously it is important that we continue to help the cattlemen and to assist in further developing the big ranch. No pains will be spared to do this. The department is now spending money to develop the live-stock industry in connection with the reclamation projects and is asking for more. But unquestionably the largest hope for a considerable increase in our meat supply lies in four directions: First, in a more satisfactory handling of the public grazing lands; second, in systematic attention to the production of beef animals in the settled farming areas of the country; third, in increased attention to the smaller animals, such as swine and poultry; and fourth, in the control and eradication of the cattle tick, hog cholera, tuberculosis, and other animal diseases and pests.

The present method of transforming the grasses of the public grazing lands into beef and mutton are generally conceded to be wasteful. It is estimated that under a proper system the quantity of beef and mutton produced on these lands could be increased by at least 50 per cent. The public grazing lands, in addition to 150,000,000 acres in the National Forests, embrace about 300,000,000 acres. Under the present laws any person may graze any amount of stock at any time on any part of these 300,000,000 acres of the public grazing lands outside of National Forests. In earlier years, when there were comparatively few cattle on the range the treatment of the lands as common worked fairly well, but the increased domestic and export demand for meat has resulted in overgrazing. Unseasonable and excessive grazing weakens the vitality of the range plant and permanently reduces the crop. Furthermore, as years have passed the area of the grazing lands has been greatly reduced through the taking up of homesteads, and in many cases the better lands were thus disposed of.

There is no doubt that under legislation providing for an intelligent system of handling grazing lands a very large increase in the meat supply of the Nation can be secured. This is not mere conjecture. The opinion is based on the experience not only of the State of Texas in in handling its public lands, but also on that of the Federal Government in the management of the grazing lands in the National Forests.

For ten years the United States Government has been conducting a successful experiment in the forests. So quietly has this experiment proceeded that few people have known even of its inauguration, recognized its importance, or appreciated its results. Under the Forest System annual grazing permits, with the necessary regulatory provisions, have been in force for nearly a decade. The results have been striking. In 1905, 81 acres supported but one animal; in 1913, the average was one animal for each 51 acres. This increase of 59 per cent has been due to many factors which cannot be detailed here. The net results are that the grazing lands in the forests under premits to nearly 29,000 livestock growers, suport 1,600,000 cattle and horses, with their calves and colts, and 7,600,000 sheep and goats and their lambs and kids. In addition, the forest ranges furnished temporary grazing to millions of animals which passed through the forests under crossing permits. The capacity of the range has not been reached. There is room for more animals on this part of the public domain. It has been demonstrated that under systematic management the grazing value of the lands can be restored and increased, that the range can be made to produce heavier animals, even with increased numbers, and that these lands can be improved faster in use than in idleness. Even with the very moderate grazing fees charged, the stockmen pay the Government over $1,000,000 annually. Their gross receipts probably exceed $30,000,000, and their invested capital is more than $100,000,000. A proof of what this constructive handling of the range problem signifies may be found in the desire of many stockmen to have the department's system of grazing extended to the open public range outside the National Forests.

There is no question that the average farmer in the settled areas of the Nation generally, north, east, south, and west, can produce without great expense a larger number of beef animals, if only as by-products, to the betterment of farm economy. It is further apparent that farmers everywhere, if they will apply existing knowledge, can largely increase the supply of swine and poultry products, which constitute a large and growing part of the consumption of the average family. In no other way can a considerable addition be so quickly made to our meat supply as through increased attention to poultry and swine on all the farms of the Nation. The annual value of the poultry products alone aggregates half a billion dollars, or 50 per cent of the total value of the cotton produced in the Nation.

The easiest and most definite program for a large increase in the meat supply involves the eradication of the cattle tick,, of tuberculosis, and of hog cholera, and the prompt suppression of serious outbreaks of such diseases as the foot-and-mouth disease. The Federal Department of Agriculture inspects meats passed into interstate commerce. Of 57,000,000 animals inspected in the fiscal year 1914, 533,000 were found to be infected with tuberculosis. This disease is increasing. It is estimated that hog cholera caused a loss in 1913 of over 6,000,000 hogs, valued at more than $60,000,000, and that the cattle tick causes an annual loss of from $40,000,000 to $100,000,000 or more, and prevents the proper development of the live-stock industry in the infected area.

The department is now directing the expenditure of a fund of $500,000 for the eradication of hog cholera, and many of the States are likewise spending considerable sums. The two agencies are working in cooperation and are making experimental and field demonstrations in the control of this disease. Unquestionably the appropriation of a half million dollars for the eradication of hog cholera should be continued.

SMALL CHEESEMAKING.

To the Editor: Can one who is ignorant of the subject make and sell cheese as profitably from three or four cows as can be made from selling butter fat? Also what work on cheese making would you recommend?—C. D. P., Oakdale.

[We do not believe that the plan you outline is practicable in any respect, first because it takes an experienced cheese maker to make good cheese, just as it requires an experienced butter-maker to make good commercial butter, and with cheese there is an added objection in our alfalfa sections due to the difficulty of making good cheese from alfalfa milk, which even experienced cheese makers often find difficult. Then too, in making cheese the cost of equipment, etc., for a three-cow dairy would be prohibitive. We believe you had better stay with the butter fat proposition at least until you have a much larger dairy. The book entitled "Science and Practice of Cheese Making" by L. L. Van Slyke and C. A. Publow is a complete treatise on the subject and may be obtained at this office for $1.75.—Editor.]

The breeder who is honest with each purchaser, selling only such bulls as he is sure will benefit the dairyman, is the man who is building for himself a future reputation that will net him big returns. So many purebred scrubs are what hurts the breeding game most.

Oak Grove BERKSHIRES
Cholera Immune
Our herd is Cholera Immune, the only Immune Berkshire herd in the State
Five herd boars in use and they are second to none on the coast. Our sows are of equal merit.
We have at present some 300 Berkshires and we know that we can supply what you want.
WRITE US OR CALL
OAK GROVE DAIRY FARM
H. G. ARMSTRONG, Prop.
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HOWARD CATTLE COMPANY
BREEDERS' AND IMPORTERS OF SHORT-HORN CATTLE
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RHOADES & RHOADES
EXPERT LIVE STOCK AUCTIONEERS
Sales conducted in all parts of California and adjoining States. Write for dates and terms.
Twenty-five years' experience.
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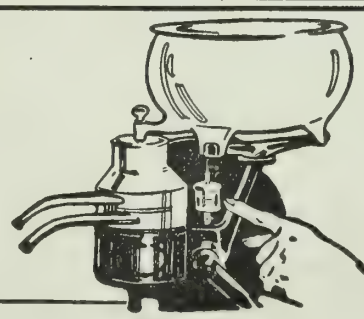

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The best cream separators often fall below expectation simply because they are not properly lubricated. The separator is your most delicate farm machine. It demands an oil especially made to suit it.

Standard Hand Separator Oil

is just such an oil. It is made for separators and it is of just the right body to quickly reach those finely adjusted, close fitting bearings. It protects them from wear. It enables your separator to deliver *all* the butter fat. It eliminates unnecessary repairs and lengthens the life of your machine. There is no better oil made for your separator. Ask your dealer for it.

Standard Oil Company
(California)

With the Live Stock Men

The Portland Ranch company of Lancaster have just purchased 27 head of dairy cattle of a Tulare dairyman for an average price of $100 a head.

Bands of sheep aggregating some 50,000 head are reported being held in the Newark valley ranges of Nevada waiting for sufficient snow-fall to allow of driving to the white sage flats of Nye county.

The Paicines ranch at Hollister has received a shipment of stock recently from Kentucky, which after going through several rigid inspections at different points along the way were declared free of the dreaded foot-and-mouth disease.

The success of the livestock specials being sent out once a week over the Southern Pacific from Klamath Falls to San Francisco was further shown last week when a trainload of 42 cars arrived in Oakland in a little over 25 hours from Klamath Falls.

A stockman from Newcastle purchased last week a large herd of beef cattle in the Live Oak district at prices ranging from five to eight cents a pound on the hoof. The stock will be winter fed in the Newcastle district for the early spring market.

The San Jose board of health has issued a notice that no more licenses will be issued to dairymen, giving them the right to sell milk in that city, until they have weeded out all tuberculous cows from their herds. It is also provided that each dairyman must secure a legalized veterinarian to pass upon his herd.

In writing to this office W. J. Hanna of Gilroy states that he is disposing of all his grade hogs and in the future will only raise purebred Poland-Chinas, of which he already has a nice foundation. The continual addition of new herds of swine all over the State is proof positive that we are to have more and better hogs in the future.

Out of the herd of 11 cows auctioned at Modesto last week, 10 of them sold for an average of $113 each, two of them selling for $140 each. This, it seems to us, is the best example of what expense progressive dairymen, in a district where butter is the all-important product, will go to in order to secure good cows. Poor ones do not pay at any price.

All trading was done quickly at the Portland Union Stock Yards last week to make way for the Pacific International Live Stock Exposition and outside of the show cattle receipts were light, best steers selling at $7.40, good steers going at $7 and cows around $6. Nearly all of the available hog space in the yards was needed to house the run of hogs on Monday, which amounted to nearly 65,000 head. Prices fluctuated during the week, opening at $7 than dropping 10 cents and again regaining strength and closing at $7.10. Sheep receipts continued to show a decrease under last year, prices being strong on lambs at $7.50, ewes at $5, and yearling wethers at $6.

Rumor has it that horse-buyers for European powers are active in many parts of the State, but so far most buyers have professed to be independent purchasers. One exception to this rule, however, is reported to have been made in Tulare county, where a buyer has come out in the open and issued a public statement in which he sets forth that he wants geldings and mares from 15 to 16 hands high, weighing from 1,000 to 1,200 pounds and from 5 to 10 years old. He states also that he is paying from $65 to $110 for animals fit for service. If this be true and the trade continues to spread over the State, we may look for a general scarcity of horse-flesh in a short time. All of which is a fine argument for the carrying out of the draft-horse sale at Davis early next year, that our available breeding stock may lay a proper foundation for future breeding.

THE SMITH SALE.

The last purebred cattle sale of the season of 1914, held at the Geo. Smith ranch near Corcoran, December 12, demonstrates at least two things—first that there is a keen demand for registered Holstein cattle, and second, that this demand has assumed larger proportions than many had expected, for while it was the third sale of registered Holsteins held since June, and all of them good-sized ones, too, there were 20 different buyers present for the 71 head offered, besides the many who would have bought had financial conditions been better.

The total receipts of the sale were $16,970, or an average of $239 a head, which was a good average when we consider that considerably over half of the total number were heifers and young bulls. In fact there was a noticeable increase in the average prices paid for young animals over those paid at Mr. Smith's June sale, the bred heifers averaging $16 a head better, the yearling heifers $32 more, and the heifer calves $19.88 more. This would seem to indicate a disposition on the part of buyers to favor the young stuff and develop them themselves, waiting perhaps a little longer for results.

The cow Lady Oak Segis, purchased by P. Rietkerk of Corcoran, proved to be the most eagerly sought after cow in the sale, topping the list at $505, the highest price for bulls being $300 paid by T. J. Gist of Tulare for the bull Segis Ormsby Homestead Forbes. McAlister & Son of Chino paid the highest price paid for a yearling heifer when Tritomia of Glennaire was knocked down at $400. The same firm paid the highest price for a heifer calf by bidding $235 for the heifer Fidessa of Glennaire. The highest price paid for a bred heifer was for Princess Anne Hengerveld at $410 by R. F. Guerin of Visalia.

The largest individual buyer was the firm of McAlister & Son, who secured 26 head of the offering for which they paid $5,365. Other purchasers were: A. F. Blanton, Kerman; A. B. Comfort, Hanford; T. J. Gist, Tulare; J. W. Guiberson, Corcoran; R. F. Guerin, Visalia; W. H. Ginn & Son, Corcoran; J. M. Henderson, Jr., Sacramento; S. A. Spencer, Waukena; T. J. Gilkerson, Lemoore; J. C. Lake, Los Angeles; P. Rietkerk, Corcoran; H. R. Steelman, Exeter; V. W. Shore, Tulare; A. V. Taylor, Hanford; E. J. Weldon, Sacramento; C. Wiechmann, Corcoran; A. G. Williams, Fresno; and the Whittier State School, Whittier.

Cows Plus Hogs

Every good cow at Fairmead brings in around $8.00 per month, cash. 25 cows means $200.00 cash each month. Two creameries collect the butter-fat, paying the highest prices. One acre of alfalfa at Fairmead will support a cow the year round or 12 to 20 hogs. Hogs can be produced at Fairmead for 4c per pound. Present prices 8c to 10c cash. Why not farm for real money?

AT FAIRMEAD

the worth-while fruit and alfalfa section of the San Joaquin Valley, where land prices are still low? Fill out and send today the following coupon:

Co-operative Land and Trust Co., Owners,
595 Market Street,
San Francisco, Cal.

Kindly send me your free booklet—"How to Obtain a Farm at Fairmead on Easy Terms."

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ADDRESS .....

Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

HORSES AND MULES

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old; also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE—14 mules, from weanlings up. One mammoth Jack and some Shetland ponies. Zack Tompkins, Sunnyvale, Cal.

REGISTERED BELGIAN STALLION for sale. Weight 2150 lbs. Apply F. Stenzel, San Lorenzo, Cal.

DAIRY CATTLE

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

TEN REGISTERED HOLSTEIN COWS for sale. Young and more with big records. Also a few well-bred heifers and bulls up to nine months old. K. W. Abbott, Milpitas, Cal.

AYRSHIRES—For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEINS—Young bulls sired by King of Riverside and Lakeside Model Prince from A. R. O. dams. J. H. Harlan Co., Woodland.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

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Veterinary Queries and Replies

[Answered by Dr. Robt. Boyd, San Francisco Veterinary College.]

MAMMITIS.

To the Editor: One of my cow's front teats and side of udder swell up and gets very hard. In a few days that teat milked out blood and matter and finally went dry. She will be fresh in a few days again and is very bad. Have rubbed it with sulphur and lard. Can you tell me of a remedy?—A. C. Y., Conley Station.

[This is mammitis. Give cow a purge of epsom salts 2 pounds, powdered ginger one ounce dissolved in 1 quart of warm water. Do not give this if cow is within a week of calving, or for a week or so subsequent to calving. Bathe udder twice daily and rub into udder, after bathing, the following liniment: Tincture aconite, fluid extract belladonna, soap liniment (U. S. P.), alcohol, of each four ounces and mix. Inject into the affected quarter by means of a milking tube about six or eight ounces of a saturated solution of boracic acid at about blood heat, twice daily and afterward milk out again. Keep cow in dry comfortable quarters and allow plenty of bedding. Take care to keep milking tube thoroughly clean.]

CURING DOG WITH DISTEMPER.

To the Editor: Will you give me a cure and preventive for distemper in dogs?—J. C. Chiles.

[Distemper in a dog is an acute febrile disease which may take many forms. There is no specific cure for the disease and preventive inoculation does not seem to have been the success claimed for it by the manufacturers of the bacteria. To go into the disease anything like fully would require too much space, but we can say briefly that hygienic measures and keeping the affected animal's strength up with light, easily digested food, such as raw beaten-up eggs and small doses of good whiskey, raw beef juice, etc., and keeping warm and allowing plenty of fresh air, are about the only measures that can be taken by the layman. I warn you against the so-called "distemper cures," as these may do harm.]

COW WITH WARBLES.

To the Editor: My two cows have hard lumps, about the size of a large pea, along the back-bone, under the skin. I am told they contain a worm. Will you please tell me how to remove and prevent a re-occurrence?—J. H. B., San Jose.

[These are probably warbles. The fly deposits eggs on the cattle which they lick off and in so doing hatch the egg. The larvae burrows through the tissue till they reach the neck and shoulder. The method of control is to scrape all eggs off from cattle and paint over with coal oil, (taking care to keep animals out of the sun for some little time afterwards). The skin should be punctured and the warble squeezed out and destroyed by crushing or burning after which apply a mild antiseptic to back.]

UDDER TROUBLE.

To the Editor: I have a cow that has some udder trouble and wish you would tell me what it is and what to do for it. One quarter sometime ago became hard and congested so it was difficult to get milk from it and then sometimes it was stringy. It has now affected another quarter. She will be fresh in two months, but has been that way since July.—G. H. B., Ceres.

[See answer to A. Y. C., Conley Station.]

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A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
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FUTURE OF BEEF CATTLE.

There have been several large beef finishing establishments started in California during the past two years and there is every evidence that more such plants will follow. As alfalfa and silage are to be the chief feeds used the following by E. A. Burnett, Dean of the Nebraska Agriculture College, will be of value:

It would seem that with an increasing demand for beef, young animals should not be slaughtered at 800 or 1000 pounds when they can profitably be fed to 1200 or 1400 pounds. It is probable, however, that for the greatest profit, most of the cattle grown on our farms must reach the market as finished beef by the time they are 24 months old.

The man who grows beef can hardly get away from grass. While pasture grasses do not produce as large a net revenue per acre as alfalfa or corn, they fill the soil with root fibers and make the nitrogen more available so that the ground is more productive when it is again placed in cultivated crops. On high-priced lands a larger tonnage must be produced to make more beef to the acre. If this cannot be done then beef growing will not be profitable on the highest-priced land. While not a good pasturage for cattle, alfalfa is by far the most productive of forage plants. It should make up the major portion of the acreage on any cultivated farm where live stock is a leading feature. It is recognized that every farm wastes a large amount of roughage each year which could be utilized with live stock to good advantage.

Where alfalfa can be purchased at $5 or $6 a ton there may be question whether silage or alfalfa is the cheaper for feed. This is not the whole question, however. With a silo we are able to keep practicaly double the number of cattle that we could keep without its use. Twenty acres of corn in a silo will furnish rough feed for 40 head of cattle during six months of winter when fed in connection with 15 acres of alfalfa hay. Any farmer who grows from 60 to 80 acres of corn can well afford to put 20 acres of it in the silo and can greatly increase the number of cattle on his farm.

The amount of grain required for each hundred pounds of gain increases with the age and increased fatness of the animal, being lowest with the calf. Some experiments were carried on at the North Platte experiment station in Nebraska to determine what sort of a ration would give the best gains with the greatest economy. Ranked in the order of profit per steer, alfalfa, silage and corn stood first, yielding $22.21 per head. Prairie hay, alfalfa and corn came next with a profit of $20.28 a head. Prairie hay, corn and cotton-seed cake stood third, giving a profit of $17.05 per steer. Prairie hay, silage and corn, very evidently a one-sided ration, not supplying sufficient flesh-forming constituents, stood lowest, giving a profit of only $11.77 per head.

These figures include the profits from the hogs that were fed in the lots, but the ranking of the different rations would not be changed if these profits were not added. In these days no farmer would think of feeding cattle without using hogs.

Holstein Breeders
I am going to New York the latter part of December and will be present at the Dispersal Sale of the E. H. Dollar herd of 170 of the greatest Holsteins in the world. Will also attend the N. Y. Breeders' Sale Jan. 13-14. I will buy and deliver to any California breeder who wishes to take advantage of carload rates and first-cost price from the East. Correspondence solicited.
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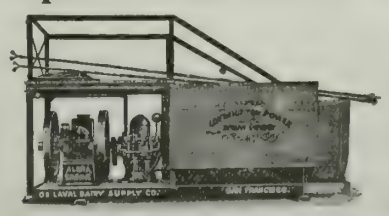
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SAN FRANCISCO. SEATTLE.

Soiling or the Silo.

It may seem a little out of season to be talking about the methods to be used in handling next year's first cutting of alfalfa at this time, but the question of pasturing, soiling or siloing alfalfa has become such a debated one that everything pertaining to these subjects should be of interest at any time of the year.

Most progressive dairymen have already decided that the loss from pasturing through bloat and in feed wasted are sufficieint factors to warrant other measures being taken to secure the same milk-flow, and for that reason the silo and soiling have come into more general use.

The use of silage or the soiling system results in an increase in the number of cows that can be kept on a given acreage. Both systems have the advantage of saving land, fencing, and increasing yield of food and manure besides resulting in a greatly increased production of both milk and butterfat. Which system is the most economical will depend upon local conditions and the price of labor.

With a view to securing some reliable data as to the comparative cost of using the summer silo or the soiling system, the Wisconsin Agricultural Experiment Station conducted experiments with their dairy herd of twenty-four cows for three seasons, 1910, 1911, and 1912, and the Nebraska Experiment Station for one season, 1913, both reaching the same conclusion, that the summer silo was by far the most economical, and that it was a necessity on the dairy farm.

It was found as a means of keeping up the maximum milk flow during the hot, dry summer months, that the soiling system was very nearly as efficient as silage, but the relative expense of producing and feeding soiling crops was considerably greater than silage. The daily harvesting of soiling crops in all kinds of weather and in the limited quantities required, was the most inconvenient and expensive system of harvesting that could be employed. The expense incurred in the Wisconsin experiment in this connection was from $12 to $15 per month, for which no adequate increased returns in the milk production were obtained over that secured in the use of silage.

It is evident that it requires less labor to plow, fit, plant and harvest an entire field of corn for silage than it does to cut and haul soiling crops all summer. The harvesting of corn for silage is done at much less expense for the reason that a well organized force of men and machinery to fill a silo in a single operation saves not only time but enables the work to be accomplished more efficiently.

In the Wisconsin experiment the the labor required daily to throw out and feed enough silage for the cows in the trial did not exceed twenty minutes of time for one man, which is an item of expense as compared with the labor of soiling crops from the field for the cows (which was an average of one and a half to two hours' work daily for one man and a horse).

Corn silage under ordinary conditions is uniform in quality and palatable to the cows. This cannot be said of soiling crops, for it is difficult to have this of good quality at all times.

Silage is always under cover, hence does not require harvesting in all kinds of weather. Even with the best of management the season may be such as to hinder the growing of a soiling crop, and as a consequence, a shortage of the right kind of feed may be had at the time when it is needed the most.

The California rancher has a decided advantage over the farmers in the east, in that they have a longer growing season and can usually fill the silo twice every year. The first cutting of alfalfa that as hay is hardly worth harvesting, makes excellent silage for summer feeding, and can usually be all fed up before the fall filling of corn is ready.

The summer silo furnishes a succulent ration and maintains a continuous milk supply when pastures may be seriously affected by drought. It permits of a more intensive system of dairying and the keeping of a larger number of cows on a given acreage. It decreases the necessity of a heavy grain ration and the purchase of concentrate feeds.

Silage will keep for an indefinite period if properly prepared and is relished by all animals quite as much as the best of rich juicy pasture.

Unless an abundance of rich juicy pasture is a certainty the dairy farmer should provide a summer silo and feed silage in such quantities as the cows will eat without waste.

INDIGESTION AND CASTRATION.

To the Editor: I have a calf about six weeks old that I castrated about three weeks ago. Am feeding skim milk with a little oil cake meal and did use some middlings instead of oil cake meal at first. Since castrating he has had some urinary trouble. The water runs from him quite often so that he is wet all of the time. I found a lot of white granules gathered about the outlet. I gave calf two or three doses of spirits of nitre some days ago also a dose of salts as he appeared to be constipated. The salts acted satisfactory but the nitre did not seem to help any. His bowels seem all right now, and he eats but not very heartily. Can you suggest a remedy?—R. S. M., Antioch.

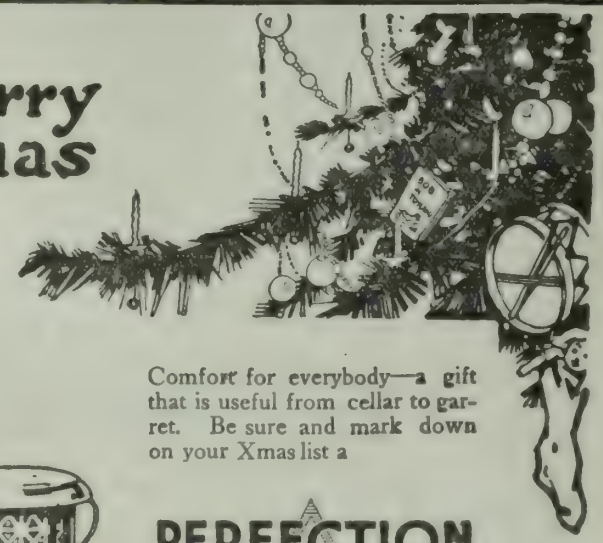
[I should say that this trouble is more due to indigestion than from the effects of castration. No doubt the fact of castrating the animal would percipitate the trouble, but it was more than likely from errors in feeding at first. If the animal is not dead by the time that this appears in type would advise you to put him on a milk ration for a time and give the following powders once daily: iron sulphate ½ ounce, magnesium sulphate 3 ounces, powdered nux vomica 1½ drachms, powdered gentian root 1½ ounces, powdered caraway seed 1 ounce. Mix and divide into six powders and give in ½ pint of milk and a tablespoonful of molasses.]

Cattle feeders are complaining of receiving too litte for their finished product. The great trouble with California is that the stockmen do not get paid for quality.

Don't put your warm cream into a can containing cold cream. Wait until next milking before pouring them together. Your creamery man will be enabled to make better butter.

Rome wasn't built in a day, neither can a high-producing herd of cattle be secured in a day. Dairymen who have spent years in building up a herd of high producers don't sell their best.

Merry Xmas



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Salt Lake Route
"THE WAY TO THE EAST"

Poultry for Profit

[Written for PACIFIC RURAL PRESS
By Susan Swaysgood, Pomona, Cal.]

Poultry Notes for December.—Rain, rain, beautiful rain, what would California be without it? The month has started out fine and those who have taken old Father Time by the forelock, and got something in the ground to grow will soon reap the benefit. The hens do enjoy digging up oats or barley that has been sown in the ground and covered lightly with a cultivator. If you have not got any out be sure to get some as soon as possible.

Another thing to remember is that chickens like a tight roof over them; don't play old man "Arkansaw," but get down to business and fix that leaky roof before another rain comes on. And if you can possibly do it arrange to have a scratching shed so that the hens can find something to eat when they get off the roost in the morning. This is a matter of economy, start the blood circulating and you have a hen that can't help laying.

Comfort spells eggs, no matter what breed of fowls you have, if you look after their comfort you are adding to their capacity as layers and breeders. Among the comforts may be mentioned fresh water from well or hydrant in a morning. Go around the last thing in the evening and pour out all water from the drinking vessels, let the fowls pick and scratch around a little both before and after their breakfast, then fill all water vessels fresh from hydrant or well. You will find the water about three degrees warmer than that left out all night in the drinking pans. Nothing chills a hen quicker than drinking this cold water early in a morning, and chilled hens rarely lay many eggs.

FEEDING SULPHUR TO FOWLS.

To the Editor: Please answer through your columns if sulphur fed to hens will drive off body lice; what amount to feed a dozen hens, and if sulphur will stop them from laying?—G. H. B.

[If you were to feed enough sulphur to kill a hen it might possibly have some little effect on the lice, because they won't stay on a cold dead carcass, otherwise I doubt if sulphur will hurt lice. At this time of year, feeding sulphur is a risky business as it opens the pores of the skin and is a cause of colds.

If fed in any quantity it certainly will stop them from laying, in winter anyway. Better treat the lice externally; it is a little more trouble but much safer. "California Poultry Practice" gives several formulas for lice powders that you can make at a nominal cost.]

CHICKEN POX.

I have turkeys with wart-like sores on nostrils and comb. Can you recommend treatment?—Mrs. J. E. W.

[This is chicken pox and no doubt a little canker in some cases. In addition to the carbolated vaseline recommended in "Poultry Practice," it will be well to give the birds a tonic such as tincture of iron; about a teaspoonful to half a gallon of water and see that they drink it. If all the birds are treated to a good covering of carbolated vaseline those that have not taken the disease will not take it near so bad, if they take it at all. It is a case of clean up and feed it; impoverished stock get this disease, while stock in good condition go safely through it.

For the canker, clean out the pus and sprinkle powdered blue-stone in the cavity. About two treatments will cure if done right.]

THE DIFFERENT POULTRY SHOW.

[Written for PACIFIC RURAL PRESS.]

People who attend one show after another, year in and year out, are apt to become convinced that like the circus, "they are all alike" and on that basis the San Francisco Poultry and Pet Stock Association should be handed the palm for originality in staging a show that, to quote a visitor, "makes 'em all set up and take notice."

From the time one passed, the uniformed ticket collector until he had taken in the last sight there was always a feeling that this show was different, not perhaps in respect to the physical condition of the birds which have been on the circuit all season, but in the little things here and there which are all too often neglected at most shows.

Upon entering, for instance, there was no need of groping your way around to find a path leading to this or that department, but on the contrary, there it was, the whole show in plain view, and it was plain too, with the wonderful lighting facilities provided through the battery of windows extending the full length of the building along each side, together with supplementary lighting by electricity.

To make this lighting system still more effective and also provide great quantities of room for visitors, the aisles were much wider than is common and more than one visitor appreciated this feature. The cooping too was done in a methodical way, being built up at just the right height to afford the finest possible view of the birds and never piled on top of each other.

A thing which struck us as being sensible, was the fact that the poultry rather than the pet stock was placed closest to the entrance, for this position is undoubtedly an advantage and we believe that the poultry should be featured in the show as it is in the publicity.

Directly in the center of the building and running the entire length of the poultry cooping were the pen displays, copied after the Madison Square poultry show it is true, but still so attractively new and worthy to California show followers that as a unit they were easily the feature of the entire show. Built as they were, close to the floor, and providing ample room for the ten fowls which they contained, the spectator was afforded an opportunity of gazing at his favorite pen from every imaginable angle, as near like viewing them at home as it is possible to make it. Utility breeders were quick to grasp the importance of this feature and exhibited birds with little respect to fine feathers but having wonderful conformation for egg production, upon which basis they were judged. The awards showing a number of points scored by each pen were given in the premium list. This is getting nearer the foundation of better bred birds in the way we like to see and the idea should be enlarged upon.

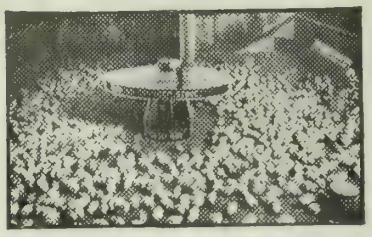
Because we have said so much of the poultry it should not be understood that pigeons, rabbits, and pet stock were neglected, for such was not the case and the same general efficiency of cooping and lighting was as much in evidence in those departments as anywhere else. Particularly was this true with the pigeons and the pet stock, for here too space was liberally given and each cage or coop was open to light on both side and top.

In locating the poultry supply houses, system was again apparent, ample space having been furnished along one entire side, which with the overhanging balcony from above made a cozy, home-like appearance to each booth and added greatly to the general effect.

An attraction which created no small amount of interest, both among consumers and producers, was the egg testing done each evening by E. T. Lindley, a professional egg tester of San Francisco, who showed some 60 different eggs with varying quality. Twice the space given this feature could have been advantageously used and the idea should be further practiced at all shows.

As special features for the curious as well as those in the poultry and pet stock business for a livelihood, another innovation was sprung upon the unsuspecting by the exhibition of frogs and terrapin, together with the domesticated fish on display. We were told that the two former are being grown and sold in a highly profitable manner in San Francisco for the purpose of tickling the palates of patrons at the higher-price cafes and hotels.

All the birds entered were very high class, and H. H. Collier, the poultry commissioner from Washington to the Panama-Pacific Exposition, said that the winners could go any place in the country and get inside the money. The attendance was much lighter than the show merited. The rainy weather and the hall being situated away from the crowds, no doubt had something to do with it. Much of the success of the show was due to the able work of the superintendent, H. S. Harding, as well as secretary Talbott.



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Turkeys Wanted

Our sales on Poultry for the month of November were $64,386.85. All this business came to us on a CONSIGNMENT BASIS. Is there ANY GOOD REASON why we can't handle your TURKEY SHIPMENTS?

Certainly you are interested in getting GOOD PRICES. Our large poultry trade needs TURKEYS EVERY DAY in the week. Therefore we solicit your REGULAR WEEKLY SHIPMENTS.

We remit EACH WEEK at ACTUAL SALES less 8 per cent commission.

We will give $50.00 in prizes to the poultry raisers guessing nearest the amount of our sales for the month of December; $15.00, first nearest guess; $10.00, second nearest; $5.00 each next five nearest guesses. The names of winners will be given in this paper after January 1st, 1915.

Write us stating number turkeys you have for shipment now or for Christmas market.

HARBAUGH & COMPANY

238-242 Davis St., San Francisco, Cal.

Mention this paper when writing or sending your guess.

New Federated Poultry Association

[Written for PACIFIC RURAL PRESS
By Paul Parker.]

As an outcome of certain informal discussions relating to the poultry industry at the recent San Francisco Poultry Show, a meeting was held Friday evening, Dec. 11, for the purpose of organizing a strong federation of the various poultry clubs and associations and all those otherwise interested in upbuilding this business. George H. Croley was elected president and E. J. Talbot of the San Francisco Poultry Association, secretary.

The need for such an organization was never so apparent as now. The legislature is soon to meet and there is no forceful way of getting recognition except by some such centralized body. Some of the work this federation may accomplish with the proper backing of the poultry people over the State is: Securing necessary legislation, and preventing adverse laws going into effect; having the railroads, Chambers of Commerce, and other publicity agents give due weight to poultry matters, now frequently ignored to the hurt of the industry and the misfortune of the State, county and homeseeker; securing complete lists of the poultry breeders so as to promote the sale and exchange of good stock; getting more recognition at the various district fairs and bettering methods of marketing poultry products.

Several valuable speeches were made during the progress of this meeting. President Croley gave some startling data as to the importance of the poultry industry. He said in part:

"Very little statistical information is to be had relating to the amount and value of the annual product of poultry and eggs in California. Proper investigation of this branch of the livestock industry of the State has been almost completely neglected. The meager reports we have been able to obtain, indicate that the value amounts to about eighteen million dollars per year, based on the prices paid to the producers.

"And because of conditions surrounding many of these producers, they find in this industry the only avenue of employment open to them. A large part of this sum furnishes the sole income of a number of these people, and renders them contented and partialy or wholly self-supporting. It enables those people to maintain their ambition and self-respect because of the opportunity to remain welcome and useful members of the community, who would, if deprived of this means of earning their share of this money, become dependents, a burden instead of a benefit to the State.

"It is particularly essential that we consider these factors as of genuine importance for the reason that it is now deemed the duty of the people as a whole, the State, to save waste and use preventive measures to avert poverty and delinquency, as well as to correct and punish; therefore, this industry should be of sufficient ultimate value to the people of this commonwealth to warrant the constant and systematic attention of the State government. It is the duty of the community to supervise more or less the conduct of this scattered but peculiarly beneficial branch of agriculture; to gather and disseminate reliable, concrete information and advice; to encourage these small producers and endeavor in every proper way to assist them to help themselves, thus preventing failure on their part.

We believe that, fundamently at least, poultry raising is the most important industry in America to-day and that California offers a wider and more inviting field for future development in this branch of agriculture than any other State in the Union."

In discussing the speech of Mr. Croley, Frank Honeywell said:

"At this time a move is on foot which promises to be successful, to co-ordinate under one head the several State commissions having to do with the various branches of agriculture, to be known as State Secretary of Agriculture. Before this bill is presented to the legislature, the poultry interests should interview the committee having the proposed law in charge that provision be made whereby poultry interests may be conserved. One such provision should be the appointment of a good, strong man with a fixed headquarters, a stenographer, and a sufficient expense account. A man in this position could do a great work in helping along one of our best industries. Surely if the State can afford to appropriate $100,000 to conserve the fruit interests, and various lesser amounts to aid the dairy, viticultural, cereal, and several other branches of agriculture, it can not afford to neglect poultry."

Mr. Talbot then spoke of the good such an organization could do in safeguarding the consumer against low-grade products, such as Chinese eggs, which are now flooding California; the heavy shipments of worthless and diseased poultry from the East; the placing on the market of "alfalfa" and other defective eggs. This federation can also do valiant service in educating the consumer to use better grades of poultry and eggs, so as to put a premium on quality.

The headquarters of this federation have been opened at 316 Underwood Bldg. in charge of George H. Croley. Every poultry association and every poultry man is urged to get in touch with this organization immediately and help it secure recognition from the State. As the time for action is limited to a few weeks, it is hoped that the poultry interests will take up the work at once and report to Mr. Croley.

AWARDS AT SAN FRANCISCO POULTRY SHOW.

[Written for PACIFIC RURAL PRESS]

The winners of the utility yards displays prizes were White Leghorn, Hopland Stock Farm; white Plymouth Rocks, Hopland Stock Farms; buff Orpingtons, E. R. Croley; white Orpingtons, H. S. Harding; Buttercup, M. S. Woodhams; white Leghorn, J. S. Jennings; light Brahmas, Mrs. L. B. McCubrey; Ancona, L. W. Potts; Rouen Ducks, W. A. French; White Indian Runner Ducks, W. A. French.

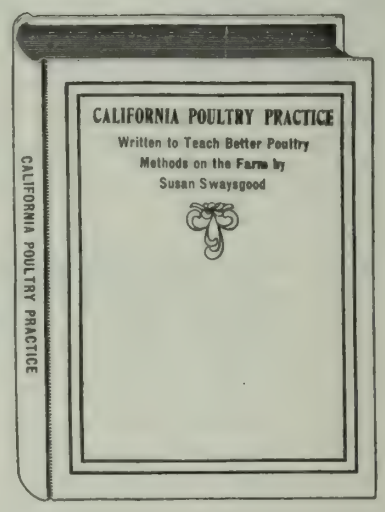
The special awards were: Best bird in Show, buff Cochin hen, Mrs. Rabbit Co., F. Kellar, F. Taforo, J. Villar, Green Valley Rabbitry, A. E.

CALIFORNIA POULTRY PRACTICE

Written to Teach

BETTER POULTRY METHODS

On the Farm



BY

SUSAN SWAYSGOOD

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28 Capons.
29 Prepotency and Prolificacy.
30 The Mediterranean Class.
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32 The French Breeds.
33 The Asiatic Class.

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Mrs. Swaysgood has spent a lifetime in raising poultry, mostly in California. This cloth-bound book of 160 pages, besides half-tone pictures, tells of the up-to-date methods now used on California poultry farms. Every reader of this journal should have a copy.

Price, $1.00 Postpaid

Pacific Rural Press

525 Market Street

San Francisco

Du Jardin; best Cockerel, black Orpington, Frank Olmo; best pullets, black Minorca, A. C. Masteller; best pen, buff Orpingtons, best bantam, buff Cochin, Mrs. F. Willin; best pen of bantams, E. L. Keesling, best game bird, E. R. Flint; best cockerel Med, class, black Minorca, A. C. Masteller; best cockerel Asiatic class, black Langshan pullet, Geo. A. Janssen; best cockerel American class, barred Rock pullet, C. H. Vodden, best pen American class, barred rocks, C. H. Vodden.

The winners in the rabbit section were: C. Collins, F. Smith, Cobrook Betts, E. T. Hammond, H. Prather, C. Neidhart, C. A. Burns, Mrs. Brooks, Imperial Rabbitry.

The pigeons were 300 strong and the winners of the special prizes were: King lofts for best utility pigeons; H. Garms, Fancy pigeons; King lofts, pigmy pouter; D. Moran, Draggon; W. J. Head, Owl and Turbit; King lofts, Scandaroon and White King; W. L. Culver, Maltese; E. D. Kyse, Flying Homer. F. M. Jones, best runt; King lofts, show homer, mondaine and fantail; Craigstone lofts, best Carneaux.

The children's pet stock exhibit recorded an entry triple in number and specially unique in variety over last year. Of special merit, were: the young zoo of George Legnitto, of San Francisco, including canaries, finches, doves, parrakeets, pheasants and bantams. Willie Horstmeyer's display of pigeons was most excellent. Francis Cummins of Alameda, Leslie Head, Thomas Mullan, Miss Virginia Powell and Beltam Wolf also had entries of special merit.

The judges were H. H. Collier, Tacoma; W. M. Coats, Vancouver; A. H. Currier, Santa Rosa; J. C. Doolittle, Belmont; W. J. Head, Berkeley; L. Regnar, A. F. Petty, Burlingame; Dr. F. W. D'Evelyn.

SPARROWS KILL ROOSTER.

[Written for CALIFORNIA RURAL PRESS.]
By Susan Swaysgood, Pomona, Cal.]

A small rooster belonging to H. D. McCram, says a dispatch from Bloomfield, N. J., was killed by a flock of sparrows. The sparrows were attracted by a quantity of oats spilled in the street. The rooster also joined in the feast. A dab from his beak killed a sparrow that ventured too close. Immediately the whole flock attacked the rooster, which fought off its antagonists for awhile, but the onslaught of the birds was so fast and furious that the rooster blinded and suffering from its wounds, staggered about unable to ward off the attack.

The Sparrow Pest. — Some time back a Rural Press reader sent to the editor the query how to get rid of the English sparrow. Perhaps this department is in closer touch with the sparrow pest than the editor, for the poultryman proper is at present the greatest sufferer from the sparrow in this State, being located in the suburbs of towns and cities from which they swarm out upon him. Eventually, if allowed to breed unchecked, they will cover the orchards of the entire State like a swarm of locusts. Then, perhaps, there will be something doing in the way of concerted action in ridding this coast of the worst of pests. When that time comes, the chief factor in the good work will be the small boy. Already some of the Eastern states have become wise to this fact. In Michigan a two-cent bounty is put upon sparrow scalps; and the first day after the publication of the ordinance the small boys brought in 2000 dead sparrows.

A poultry raiser who is blessed with the small boy in the family, tells us that her boy kills the sparrows readily with an air-gun, by which means her premises are kept pretty free from sparrows except when a new swarm lights upon them at feeding time.

Moral: Make it worth while to the small boy.

Poultry Progress.—The poultryman, says Prof. James E. Rice, should start his business with modern methods, and not be content to remain fifty years behind the time, like those who still raise common barnyard fowl. Only the very best stock should be bred and kept. All mongrels should be discarded. Pure stock produces the best eggs for hatching; pure-bred birds can be depended upon to propagate their kind and to produce more eggs than mongrels; pure-bred stock produce a better quality of meat for the table and a larger and fuller breast. It cost no more to keep pure-bred chickens than it does mongrels, the first cost of even the best is little more than that of inferior stock. With a few eggs the breeder in two or three years can procure a pure-bred flock large enough to stock his farm. Better results can be obtained in feeding, as such a flock is homogeneous; what suits one suits all; but with all sorts of birds what makes one thrive may make others unprofitable.

Better success in hatching is secured when all the eggs in the incubator are alike in size, texture and fertility. The conditions favor all alike, but with all sorts of eggs many will fail to hatch.

Crossing breeds develops broodiness in the hen which is a disadvantage. Pure stock is more attractive. This counts for much. When a man is proud of his fowls he enjoys taking care of them and will not neglect them. Pure-bred eggs can be sold for breeding at high prices in the spring when the markets are glutted with common eggs and their prices are the lowest. Again in the autumn when poultry is at the lowest prices the breeder of pure-bred chickens can sell his surplus stock at remunerative prices.

But longevity and constitutional vigor must be qualities of pure-bred stock. If these are lacking the flock is unprofitable. It is not worthwhile to try to grade up stock when pure-bred stock may be so easily obtained; nor is it profitable to cross pure-bred stock of different varieties. No gain in vitality or improvement in eggs is secured.

Hatching Time for R. I. Reds and Laying.—One of our subscribers asks if it is true that R. I. Reds hatched on first of June will not lay until spring? Also if it is true that sick hens do not lay after being sick?

Both of these questions can be said to be dependable upon the treatment the fowls get. Chicks hatched as late as June first if given shade, food, water and just enough sunshine will make growth as fast as those hatched earlier. If our friend complied with these requirements he may expect his pullets to lay any time when he has them matured. As for a sick hen not laying again that is all nonsense. I once had a brown Leghorn pullet that had roup so bad she lost one eye and by cooping her up where she could not get much food she quit laying, but even while I was doctoring that hen she commenced to lay again and laid all fall until very wet weather came and then all the hens let up a little, so you see it is all depending on the hen and the feeder.

BABY CHICKS

Standard Bred.

The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price list and pamphlet free upon request. Now booking orders for Fall and Spring delivery.

THOMAS HATCHERY, Petaluma, Cal., Route C.

It's the Chicks You Raise That Count."

THE VICTOR BROODER RAISES EVERYONE

Our Brooder is perfect; so is our Incubator. Send for free catalogue.

THE VICTOR INCUBATOR CO.,
Decoto Alameda Co., Cal.

BLEACHING OUT THE HENS.

John B. Cramer, president of the Board of Education of Penn Yan, N. Y., had a fine flock of chickens, which he was desirous of selling. He was told by a prospective purchaser who looked at the eggs that the eggs were not white enough for the New York market.

A friend advised him that small doses of peroxide of hydrogen fed in water or mash would aid his hens to produce eggs of the proper degree of whiteness. He tried the experiment and the eggs grew whiter. He then increased the doses, but his hens soon stopped laying eggs of any color, and a week ago one of them died.

All that was left of his flock in a few days later was one old rooster, which Cramer would like to give away.

Poultry Breeder's Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

TO THE POULTRY FARMER—We now have under construction a modern Hatchery, and are booking orders for BABY CHICKS from our heavy laying strains of S. C. White Leghorns and White Plymouth Rocks. We solicit your order for 1915 delivery, and know that you will be well pleased with the high quality of our stock. Write for prices on Sept. and Oct. hatched pullets, and year-old hens for breeders. Hopland Stock Farm, Hopland.

S. C. WHITE LEGHORN BABY CHICKS—from my pure-bred flock S. C. White Leghorns, carefully selected for laying and standard qualities, $9.00 per 100, $85.00 per 1000. A first-class chick at a reasonable price. Eggs for hatching, $5.00 per 100, $45.00 per 1000. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal., San Luis Obispo Co.

MACFARLANE STRAIN White Leghorn Eggs. $5.00 per 100, chicks Jan., Feb., $12.00, afterward $10.00. Order now, any quantity Cockerels, $2.00; White Rock eggs, chicks, cockerels. Write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. N. B., See article about us by Prof. Adams, U. C., in October "Poultrycraft."

BLACK MINORCAS!—The hen that lays the big white eggs and lots of them. Baby chicks, January prices, 14c, from heavy-laying vigorous stock—the kind you want to keep. Write for circular and delivered prices on any quantity. Hatching Eggs, $6 per hundred. Roofden Poultry Ranch, Campbell, Calif.

MAMMOTH BRONZE TURKEYS—Large reductions offered on old stock for short time only. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

ORDER NOW—Thoroughbred Bronze Turkeys from largest Turkey Ranch in Stanislaus county. Large Spring gobblers and hens for breeding stock. Address, Crow's Landing Turkey Ranch, Crow's Landing, Cal. Box 227.

HICKS JUBILEE HATCHERY—36,000 capacity this season. Now booking orders. White Leghorns and Black Minorcas our specialty. Instructions in caring for young chicks free. W. J. Hicks, R. 2, Petaluma, Cal.

OUR SPECIAL White Leghorn Chicks are well hatched and strong, from healthy, vigorous breeding stock. Book your order now for coming season. San Jose Hatchery, 373 Meridian Rad, San Jose.

PETALUMA HATCHERY—Established 1902. Do not compare our prices with others; compare quality; the best are the cheapest in the end. Send for circular. L. W. Clark, Petaluma, Calif.

R. I. RED BABY CHICKS and Eggs from heavy-laying strain. Rosedale Ranch, Hayward, Cal.

STERLING FARM-INCUBATOR CHICKS and Hatching eggs from fully matured S. C. White Leghorns, Wychoff strain. Also S. C. Brown Leghorns, Route 2, Box 1416, Sacramento, Cal.

PINE TREE POULTRY FARM, Los Gatos, Cal.—Hatching eggs from S. C. White Leghorns. Selected stock. $6 per 100; $50 per 1000. Order now. No baby chix.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 396, Los Gatos, Cal.

WHITE ROCK BABY CHICKS.—Winnings at Modesto, 65 White Rocks entries competing, were 1st prize pen, 1st hen, 3rd cockerel, 3rd pullet. Mrs. J. B. Tupper, Ceres, Cal.

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THOROUGHBRED SINGLE COMB WHITE LEGHORNS—breeding and foundation stock eggs for hatching. Rancho Del Martino, Mrs. E. B. Martin, Downey, Cal.

STAWETSKI'S White Wyandottes and Indian Runner Ducks. Winners Oakland, San Jose. Stock, eggs. R. W. Stawetski, San Jose, Cal., R. 2.

DAY OLD CHICKS—Hoganized Egg Machines. We are booking orders for spring delivery. H. & F., Mortensen, Suisun, Cal.

PIGEONS—Largest breeders in the West. 12,000 to select from and for free catalog. King Lofts, Box 685, Hayward, Cal.

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S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. G. W. Suits, 378 Bandini Ave., Riverside, Cal.

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

CHICKENS, DUCKS, GEESE, GUINEAS, PEA FOWL. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

FINE BARRED ROCK COCKERELS for sale for $3.00 each. G. L. Hawley, Madera, Cal.

ORPINGTONS—BUFF AND WHITE—Cockerels ready for service. Susan Swaysgood, Route 2, Pomona, Cal.

LANGSHANS—Best on coast. Stock, settings booked now. Lohr, 689 Kansas St., San Francisco.

BARRED ROCKS—Prize winners stock and eggs. W. L. Kennedy, Fowler, Cal.

FOR SALE—1-year-old Buff Leghorn cockerels. Prize stock. Selected. P. R., care Pacific Rural Press.

The Home Circle

THE FAIREST GIFT.

If I were Santa Claus I know
What I would give to every boy
And every little maiden. Oh,
It would not be a painted toy,
It would not be a blushing doll,
Nor any sugared things to eat;
The same gift I would give to all,
And deem the giving sweet.

If I were Santa Claus, and
To each child give the gift I chose
The world would glow with new delight,
And lose the darkest of its woes,
For I would give to every boy
And every maiden I could find
The grace to gain unbounded joy
Through merely being kind.

—S. E. Kiser.

MARION'S CHRISTMAS PARTY.

[By Frances Harmer.]

"Mother!" Marion ran into the neat kitchen, breathlessly. "Have you talked it over with father? Can I have a Christmas party?"

"Pick up your books, dear," said her mother gently, not pausing in her stirring of the Christmas pudding. "I have talked it over with father, and he thinks"—

"I know," interrupted Marion, falling from heights of expectancy to depths of dejection. "The old, old story! We can't afford it!"

She dropped down into a kitchen chair, and her mother half sighed, half smiled, at the tragedy of such a disappointment to fifteen years.

"In the first place, Marion, a party would cost more than your father thinks it would be right to pay for any pleasure while we are in debt. In the second place, even if we could manage it very cheaply, some of your friends' fathers are our creditors, and what would they think of us? They have been very patient, knowing that we are doing the best we can; but they mustn't think we are wasting money on gayeties, must they?"

Marion did not reply. Tears gathered in her eyes and fell on her white shirtwaist.

The tears were too much for Mrs. Miller. She dried her hands quickly, and crossed to her daughter's side, laying motherly hands on the bowed head.

"There, there, child! I am sorry that you should have to help bear our money cares at your age. Don't cry. Mother will think of something."

"Mother will think of something!"

Marion lifted her head and dashed away the tears. If Mrs. Miller had reproached her with selfishness, Marion would have felt unhappy, if not still aggrieved. But the tender, and so often-heard and well-remembered phrase, "Mother will think of something!" suddenly showed her to herself in a new light.

"Don't," she said smiling through her tears as she kissed the hand that stroked her face. "I'm a wretched, miserable selfish creature! Don't do anything for me!"

And, when father came in to dinner he found his sometimes fretful daughter all smiles and eager for service.

However, the mother's face was grave. And that evening, after a talk with her husband, she formed a little plan.

"Marion," she said, as they sat at their breakfast table: it was Saturday morning, and Marion and her mother always breakfasted alone and later on Saturday morning. "What do you say to a breakfast party?"

Marion looked at her wonderingly.

"I never heard of such a thing," she answered.

"Then you haven't read some of your history very thoroughly," said her mother, with a smile. "There was once a Lady Holland who gave very famous breakfast parties! However, we won't talk about her now! Your father and I have decided that as breakfast is an inexpensive meal, and most of the things that would be needed are among our own stores, you may have a breakfast party, if you like, say, the morning after Christmas."

"I think it would be lovely—and so new!" cried the girl, her eyes sparkling. "How clever of you to think of it, Mother."

* * * *

Just before Christmas, Marion's schoolmates and special friends—about ten in number—received postal cards on which, inside a wreath of morning glories, mixed with holly and mistletoe, these words appeared:

"Come early in the wintry dawn,
Come early if you love me!
And trip across my snow-clad lawn
To join my breakfast party.!
(Eight a. m.)

All Marion's spare time was taken up in happy preparations. The little menu cards, like the invitations, had wreaths of morning glories, mixed with holly and mistletoe or with with poinsettias, and some had a robin as well. No two were alike. The menu was as follows:

Oatmeal
Southern Salad
Waffles and honey
Coffee Toast

When the morning after Christmas dawned, it was bright and clear. The sun had flushed the East with rose. The snow on the road and on every lawn and garden lay in unusual purity, yet was so hard and crisp that it was a delight to walk on.

Marion met the happy, eager, amused crowd of girls at the gate, and led them into her room to take off their wraps. Then she preceded them to the big living-room.

They gave a cry of delight at the first step across the threshold! The pictures were hung with evergreen. Ropes of evergreen stretched across the ceiling. A small Christmas tree, gay with paper flowers and tiny bags of candy, graced the center of the big round table. At every place was a spray of holly!

"This is the newest kind of party!" cried one.

"It won't be the last!" said another.

"Wasn't the air beautiful as we came along?" asked a third.

"But doesn't it make you hungry!" supplemented a fourth.

The oatmeal was served in little bowls. Then came the "Southern Salad." A long, oval dish was edged with lettuce leaves, and on every lettuce leaf lay a slice of tomato. One end of the inside of the dish was filled with scrambled eggs, the other with curly slices of bacon. The girls pronounced it very good. Then came the waffles and honey. There was coffee for those who took it, and a plentiful supply of toast.

The only gifts on the trees were the artificial flowers which Marion made so beautifully, and a motto for each guest.

Marion's grave, clever father had written wonderful nonsense verses for these mottoes!

When the guests had gone, full of merry chatter, Marion turned to her mother.

"I don't think there was ever any one like you!" she cried.

"Hundreds of us," answered Mrs. Miller with a smile. "Just mothers."

SOME NOVEL CHRISTMAS STUFFINGS.

Turkey, that monarch of the Christmas feast, can be filled in numerous ways, any one of which it might pay to try if the family is not wedded to one particular kind of stuffing.

There is nothing better, on the whole, than a plain bread and butter stuffing highly seasoned. This should be dry, rich and absolutely free from sogginess.

Cut thick slices of bread two days old, butter them thickly, season with plenty of salt, red and black pepper, and crumble into small pieces. Or, melted butter can be mixed into the bread after it is crumbled.

If seasoning is liked, sage, sweet marjoram, a bit of bay leaf and a little onion can be added. So many people dislike the taste of onion, however, that it is wiser to omit it unless the tastes of the guests are well known.

Plain Stuffing.—Take sufficient fine white bread crumbs to generously fill the turkey—the exact quantity will depend upon the size of the bird. The crumbs should be made from fine-grained white bread two or three days old. To these should be added powdered herbs—sage and summer savory are a good combination—in sufficient quantity to taste well, too much being as bad as too little. A safe proportion is one teaspoonful of summer savory and two of sage to a quart of crumbs. Mix thoroughly, then add enough melted butter to moisten it well, beating it in lightly with a fork, then season-

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ing to taste with salt and paprika.

Stuffing with Onions.—Prepare a plain stuffing as above, except that two or three medium-sized onions have been sliced thinly and fried to a golden brown in butter, which is used to moisten the dressing.

And to make this still more savory add one or two pimentoes, which have been cut into thin shreds, or a little finely-chopped green pepper.

A cup of finely-chopped celery may be added with or without pimentoes and a generous tablespoonful of finely-chopped parsley as well.

Oyster Stuffing.—Prepare a plain stuffing of crumbs as above, and add to it a solid quart of fine large oysters which have been allowed to stand for two minutes in water just below the boiling point, then drain into a colander, cutting away the comb and hard piece of muscle, leaving the meaty, plump portion.

If a fancy filling is liked, chestnuts or oysters are good choice, as neither destroys the natural flavor of the national bird.

To many families Christmas without a turkey or goose would be almost desecration; where there is to be a long dinner, however, either of these birds is somewhat heavy and squabs or game could be substituted.

Do not have a heavy soup, as it takes the edge from the appetite before the turkey appears. A cream of beet soup with thin slices of the red beets cut through it helps carry out the color scheme.

In the course Christmas dinner do not have more than two vegetables served with the turkey.

An attractive entree is a loaf of bread hollowed, buttered and browned in the oven, then filled with creamed oysters. The loaf is passed to each guest, who takes of the contents and crust.

This oyster course can be served in individual molds by using rolls instead of a loaf of bread for the shell.

A light and refreshing salad is grape fruit cut into sections, the juice drained off and allowed to marinate in a highly seasoned French dressing for half an hour before serving. Make a nest of lettuce leaves in half a grape fruit, shell and serve the salad in it.

Instead of plain crackers and cheese passed with the salad, cover salted wafers with butter, sprinkle thickly with paprika and parmesan cheese, and brown in the oven.

Mold the cranberries into the form of a five-pointed star and serve individually.

Serve plum-pudding in a holly-wreathed dish, but be careful, if brandy is burned over the pudding, that the holly is not ignited.

Instead of using the customary chocolate or cream mints for the Christmas dinner, the old-fashioned round red and white mint drops give an appropriate touch of color.

ORIGIN OF THE CHRISTMAS FESTIVAL.

The Christmas festival seems to have first been devoted to the children in Germany and the North of Europe. Here St. Nicholas, a real personage, lived, a bishop in the time of Constantine, and died December 8, 343. For a time Christmas was here celebrated on the sixth of December, but later transferred to December 25th to correspond with the practice in other countries. The patron saint of the children, known as St. Nicholas in Germany, is called Santa Claus in Holland, and Samiklaus in Switzerland. In Austria he is known as Nikto or Niglo, and is followed by a masked servant called Krampus; while in the Tyrol he goes by the name of Holy man and is accompanied by St. Lucy, who is the girl's saint, and also sometimes by a little girl representing the Christ child. At times St. Nicholas is accompanied by a masked bug-bear who carries rods for the naughty children, instead of presents. The Christmas tree in its present relation to this festival originated with the Germans, but a similar ceremony was much earlier connected with pagan rites of a different kind. In the Protestant districts of Germany, Christmas is celebrated with the Christmas trees very much as with us, by the giving of presents between parents and children, and brothers and sisters, and a more sober scene follows the Christmas tree when the mother takes occasion to tell the daughters, while the father tells the sons, what has been most praiseworthy in their conduct, and also those things of the opposite nature.—Good Housekeeping.

THE CHRISTMAS TREE.

Christmas trees always give so much pleasure that it seems a pity to omit them when they can be decorated at such small expense. Strings of popcorn, varied by an addition of bright red cranberries, can be used, a package of tinsel, which makes a great show, can be purchased at a small cost, and can be saved for another occasion if necessary. Stars, crescents and all sorts of figures may be cut out of pasteboard and covered with bright colored or gold paper to hang among the branches, paper rings can be cut out and pasted together to form chains for decoration, and little baskets made of colored paper. These are easily made from a strip of bright paper five or six inches long and four inches wide. Fold it through the middle lengthwise, paste on each edge a band of gilt or fancy paper and make cuts in the first strip the whole width and at equal distances, so that when the ends of the strip are fastened together and the basket pulled open, the cuts will open and give the basket a light, airy appearance. Finish with a handle of fancy paper to hang it on the tree by. Bright red apples, gilded pine or spruce cones, and English walnuts covered with gilt or silver paper make the tree look gay at a very small outlay of money and not much time.

A little ingenuity will devise other decorations out of simple materials. Candles add greatly to the beauty of the tree, but if used, only those which can be fastened on securely should be purchased. It is better to have fewer of them and have them safe than run any risk. Any possibility of the flames coming in contact with the paper decorations should be provided for, and it is wisest to have means at hand for extinguishing any fire that may occur. There have been very sad endings to the Christmas fun, caused by a little carelessness in that direction. If Santa Claus is to put in an appearance, a costume is easily manufactured for him of white cotton flannel with a touch of scarlet, and the children never seem to mind if his clothes are not of the latest cut. An orange or a bag of candy can be given to each child, or an easy way to give out the candy is to use Japanese napkins instead of the bags, putting the candies in the center and tying up the corners with a bit of bright-colored ribbon and spreading out the corners of the napkin so as to give a flower-like appearance. These look very pretty and are easy to arrange but will not bear very much handling from the little ones who receive them. If ice cream and cake are to be served tables will have to be spread for the smaller ones and a pretty way to do it is to have each table covered with a cambric of a different color, a small Christmas tree being placed on each, giving a very festal appearance. The napkins can be folded into boat shapes or some other form which will delight the children.

CHRISTMAS.

Christmas is not a day or a season,
If we love our neighbors as ourselves; if in our riches we are poor in spirit and in our poverty we are rich in grace; if our charity vaunteth not itself, but suffereth long and is kind; if, when our brother asks a loaf we give ourselves instead; if each day dawns in opportunity and sets in achievement, however small; then every day is Christ's day and Christmas is always near.—James Wallingford.

KITCHEN TABLE ON CASTERS.

Have casters put on the kitchen table, and you will find it will be a great help toward saving steps. When work is being done at the sink, the table may be rolled near, or when near the stove with the necessary cooking utensils upon it.

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The Markets.

San Francisco, Dec. 16, 1914.

Unless otherwise noted prices are f. o. b. San Francisco.

WHEAT.

The only quotable change is a slight advance in forty-fold. The market remains quite firm, however, owing to the strength of European markets and continued buying in the north.

Cal. Club, Ctl.	$2.00@2.02½
Forty-fold	2.05@2.10
Northern Club	2.00@2.02½
Northern Blue'm	2.15@2.25
Northern Red	2.00@2.20

BARLEY.

Brewing and shipping show no further change, but the export trade is active, and the speculative market shows more life. Feed is a little higher, as offerings are firmly held.

Brewing & Shipp'ng	1.25 @1.27½
Choice feed, per ctl.	1.20 @1.25

OATS.

No change is noted in the local market. There is no further demand for seed, and offerings of feed are ample for all current needs, so there is no particular strength to the market.

Red feed	1.45@1.50
Seed	1.65@1.90
Gray	Nominal
White	1.55@1.60
Black Seed	1.75@2.25

CORN.

Eastern Yellow is again quoted lower, in sympathy with eastern conditions. Local Egyptian is fairly plentiful and slightly easier in price, though choice stock finds a good demand.

California Yellow	Nominal
Eastern Yellow	$1.70@1.75
Egyptian White	1.55@1.65
Milo Maize	1.65@1.70

RYE.

There has not been enough business to establish very definite values. Stocks in warehouses are much larger than last year, but most of the stock is of poor quality and finds little demand. There is some inquiry for choice recleaned stock, which might bring as high as $2, while ordinary offerings could hardly be sold above $1.50.

BEANS.

Stocks in California warehouses, Dec. 1, according to the S. F. Chamber of Commerce, were 1,317,747 sacks, against 806,142 sacks a year ago. The fall movement, however, has been satisfactory, and while the market is naturally quiet at this season there is a firm feeling as to values, with expectation of a strong spring demand. The only change in prices is an advance on cranberry beans, which have been in strong demand for eastern shipment and are getting closely cleaned up. Hungarian stock, formerly used in the east, cannot be had, and Manchurian finds little favor.

(On Wharf.)

Bayos: Cal. per ctl.	$4.50@4.75
Blackeyes	3.75@3.85
Cranberry beans	3.75@4.00
Horse Beans	3.50@3.75
Small Whites	3.90@4.00
Large White	3.75@3.90
Pink	3.00@3.10
Limas	5.15@5.25
Red Kidneys	5.00@5.10
Mexican Red	4.75@5.00

SEEDS.

There is still a very fair demand for alfalfa, but with liberal offerings the price has been shaded a little Other lines are quiet and largely nominal at the old quotations.

Alfalfa	15 @16 c
Brown Mustard, per lb	Nominal
Canary	10 @12½c
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c

HAY.

Arrivals are running about the same as before, and there is little change in local conditions, the demand being very light. Fancy hay is still rather scarce, but finds very little demand, and will hardly bring the top prices formerly quoted. The crop outlook is considered good, as far as can be judged at this time of year, and there is a good deal of hay offered in the country that finds no demand.

No. 1 Wheat	$9.00@10.50
do No. 2	6.00@ 8.50
Barley	5.00@ 8.50
Tame Oats	6.00@12.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.00
Stock Hay	4.50@ 5.00
Straw, per bale	40@ 45c

FEEDSTUFFS.

Values on all lines stand as before, the market in general showing less activity than for some time past.

Alfalfa-Molasses Meal, per ton	$19.00@20.00
Alfalfa Meal, per ton.	14.00@15.00
Bran, per ton	26.00@28.00
Oilcake Meal	37.00@38.00
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	39.00@40.00
Middlings	33.00@34.00
Rolled Barley	25.00@26.00
Rolled Oats	32.00@33.00
Shorts	29.00@30.00

VEGETABLES.

A good many tomatoes from around the Bay are still offered, but will probably be cleaned up very soon. Considerable southern stock is now coming in, selling around 75c. per crate. String and lima beans are in light supply, and it is expected that the cold weather will not put a stop to shipments. Prices have already advanced. Green peppers and eggplant are easy, supplies at the moment being rather heavy. Lettuce is higher and celery steady, with a good demand in both lines.

Peppers, Bell, lb	3 @ 4 c
Chili, lb.	3 @ 3½c
Carrots, er sack	30 @ 40 c
Tomatoes, lugs	40 @ 65 c
Beans, Wax, per lb.	5 @ 8 c
String	4 @ 12 c
Lima	8 @ 10 c
Cucumbers, lugs	1.25 @ 1.50
Eggplant, lb.	3½@ 4 c
Cream Squash, box	35 @ 50 c
Celery, doz.	10 @ 20 c
do crate	1.00 @ 1.25
Sprouts, lb.	3 @ 5 c
Lettuce, crate, So.	70 @1.00

POTATOES AND ONIONS.

Onions are offered a little more freely, causing a slight decline in price. There has been a little shipping movement in potatoes, but there is now considerable stock offered from Oregon and Idaho at $1 to $1.40, and prices on Delta stock are lower.

Potatoes: Salinas, ctl	$1.40@ 1.50
River Burbanks, ctl.	85c@ 1.10
Sweet Potatoes, ctl.	1.35@ 1.50
Onions: Yellow, sack	85c@ 1.10
Garlic, per lb.	10@ 12c

POULTRY.

The turkey market this week has been rather quiet, and prices are inclined to easiness, with liberal offerings. Dealers, however, look for better conditions on the Christmas market, and expect prices to remain about as now quoted. Chickens are quiet and unchanged, with offerings about equal to the demand.

Live Turkeys, lb	20 @22 c
do, dressed,	25 @27 c
Large Broilers	20 @22 c
Small broilers, per lb.	25 @28 c
Fryers	19 @20 c
Hens, extra, per lb	17 @18 c
Hens, extra, per lb	17 @18 c
Small Hens, per lb	15 @16 c
Young Roosters, per lb.	17 @18 c
Squabs, per doz	2.00@3.00
Geese, per pair	2.50@3.00
Ducks, doz	$5.00@9.00

BUTTER.

Supplies from nearby points are coming in freely, and with no strong demand from other quarters the market has eased off again, extras losing 2c. from the figure last quoted. Prime firsts have also weakened a little.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31	31	29	29	29	29
Firsts	28	28	28	28	28	29½
Prime	28	28	28	28	28	27½

EGGS.

The market has been gradually recovering more firmness for the last week, extras showing a gain of 3½c. This has again turned the demand to pullets, which are 5c. above the last quotation.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	41½	42	44	44	44	45
Sel. Pul.	37½	37	38½	39	39	41

CHEESE.

Y. A..'s are again lower, while flats remain steady at last week's advance. Monterey cheese is in very light supply, and has again been marked up.

Fancy California Flats, per lb.	13½c
New Young America, fancy	14 c
Monterey Cheese	17@18 c

Los Angeles dairy prices.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	30	30	30	30	30	30
Eggs	39	38	38	38	38	38
Cal. Cheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS.

Casabas are out of the market, and grapes are getting scarce. Persimmons also are beginning to clean up, and bring better prices. Cranberries have been in stronger demand the last few days, and have advanced sharply. Attractive lots of Christmas apples are also bringing good prices, and the best offerings of other varieties have been marked up a little, notwithstanding the excessive stocks. There is a good local demand, but the shipping movement is not sufficient to make much reduction in the supply.

Cranberries	$8.50@10.00
Apples, Newtown Pippin	50@ 85c
Belleflowers	65@ 85c
Baldwin	65@ 85c
Xmas Apples	2.50@ 3.00
Persimmons, box	50@ 1.00
Grapes: crate	50@ 1.00

DRIED FRUITS.

All prices stand as last quoted, as the market has gotten down to the usual holiday dullness, and there is not enough trading to establish any change of values. While there is a rather better feeling all round, the outlook will not be assured for some time to come. A few sales of apples have been lately at about the range quoted, and apricots are firm, with a fairly steady demand. Prunes also are scarce and firm, and anything available could probably be sold readily at about the range quoted. The call for peaches has fallen off, but there is no disposition to force sales at lower prices and a revival is expected in the spring. The New York Journal of Commerce says:

Interest still centers in Prunes, export demand for which is said to have closely cleaned up the available spot supply, while the situation has been further strengthened by a larger demand from the home trade for goods required for present consumption. Just how much buying has been done here on export account cannot be stated with any approach to accuracy, as the business has been in various sized lots and has been participated in to a greater or less extent by all handlers of California dried fruits. It is said, however, to have been of sufficient extent to absorb most of the recent arrivals and to clean up most of the stock in store. One broker reported yesterday that he has confirmed sales of 5 cars within the past few days, and another reports sales of two cars for shipment to Europe.

Peaches, though the cheapest of dried fruits, have not up to the present time appealed forcibly to buyers, but, according to advices received in the trade yesterday, the demand is now showing considerable improvement, and the trend of prices is upward. New York and vicinity markets do not as yet display much interest.

Apricots are getting some export attention, and in sympathy with Coast advices the tone of the market is firm.

Seeded California Raisins are inactive but steady. The rather large accumulation of old crop on the spot here, which has been a depressing influence in the spot situation, has been going steadily into consumption at the relatively low prices quoted, and it is believed that it will soon be completely absorbed. The advertising campaign of the Associated Raisin Company is understood to have very largely increased the consuming demand. Seedless varieties are in small compass here, and, according to late advices, little stock is left in first hands on the Coast.

Evap. Apples, 1914	4@5 c
Apricots, 1914	6 @9c
Figs: White, 1914	4 c
Black	2½@2¾c
Calimyrna	5 c
Prunes, 4-size basis, '14.	5 @6 c
Peaches, new	3¼@3¾c
Pears	6 @8 c
Raisins (in sweatbox):	
Loose Muscatels c	4 @4½
Seedless Sultanas	5 c

CITRUS FRUITS.

Navel oranges are now moving well in the San Francisco market, but arrivals are comparatively large, and with lower prices at shipping points the local figures have been reduced. Lemons also are lower.

The eastern auction markets are holding up well under heavy shipments of oranges from California, Arizona and Florida. Lemons are slow of sale and lower in price, because of the cold weather prevailing. On the New York auction, Monday, Dec. 14th, navels averaged from $2.10 up to $3.05 per box. At Boston the same day navels averaged $2.25 up to $3.30. Lemons averaged from $1.90 to $2.60 per box. Florida oranges brought that day from $1 to $2.15 per box.

Shipments from Butte county up to Dec. 12th, were 269 cars, being heavier than a year ago; from Tulare county shipments to same date were 2600 cars, or some less than last season; from Southern California shipments have been gaining in volume, and last week there were about 50 cars sent east daily.

Oranges: Navel, box	$1.60@2.25
Tangerines, small box	1.50@2.25
Grapefruit, seedless, box	1.75@2.50
Lemons, box	1.75@3.25
Lemonettes, box	75@1.25

NUTS.

The almond market shows some signs of improvement, though no local buyers are willing to pay the Association prices. The leading soft-shell varieties, however, are readily salable at 16c., and some off-color stock has brought fairly good figures. Walnuts are quiet, but a renewed demand in all lines is expected after the holidays. The New York Journal of Commerce says: "In this line business is said to be far from normal, and in order to create demand there is a disposition on the part of dealers who carried over a good deal of stock from Thanksgiving to make a considerable concession from previously quoted prices. Larger receipts of California Almonds coming on a dull market have resulted in some instances in a cut of at least 2c. a pound from the opening figures.

Almonds, 1915 crop:	
Nonpareils	21 c
IXL	20 c
Ne Plus Ultra	19 c
Drakes	16 c
Texas, Prolific	16 c
Walnuts, new crop:	
Jumbo, lb	19 c
No. 1 Softshell	16½c
Budded	18 c
No. 2	12 c

HONEY.

There is practically no demand here, and reports have been received of large offerings all over the country at irregular prices. Considerable stock has been shipped here on consignment and is awaiting a market, while many growers are seeking an opportunity to sell. Most offerings, however, are held at about the quoted prices.

Water White, comb	10 @12 c
Light Amber	8 @ 9 c
Water White, extracted	6½@ 7 c
Light Amber	5 @ 5½c
Dark	3½c

HOPS.

The market has developed a better tendency of late, and many sales have been closed, though without any great advance in prices. Most of the Ukiah hops have been cleaned up at about 8 to 9c., and a large movement is reported in the north. The Oregon crop is said to be below estimates, with little left in the country, while more demand is noted in several foreign markets.

1914 Crop	7 @10 c

LIVE STOCK.

Values show no change this week, and conditions remain about as before, with calves, sheep and lambs scarce and firm and hogs in ample supply.

Steers: No. 1	7 @ 7¼c
No. 2	6¾ @ 7 c
Cows and Heifers: No. 1	6 @ 6½c
No. 2	5½ @ 5¾c
Bulls and Stags	3 @ 5 c
Calves: Light	9 @ 9½c
Medium	8½ @ 9 c
Heavy	7 @ 8 c
Hogs: Grain-fed:	
200 to 300 lbs	7 c
100 to 225 lbs	7½c
Prime Wethers	6¼ @ 6½c
Ewes	5¼ @ 5¾c
Milk Lambs	7 @ 7½c
DRESSED MEATS.	
Steers	10¾ lb @ 11½c
Heifers	10½ @ 11 c
Veal, large	13½ @ 14 c
Small	15 @ 15½c
Mutton. Wethers	11½ @ 12½c
Ewes	11 @ 11½c
Suckling Lambs	13½ lb 14 c
Dressed Hogs	12½ @ 13½c

HORSES.

Shipments to the local market for the last week have been fairly large, but conditions show no particular improvement, the principal buyers taking little interest. It is expected, however, that more stock will be wanted for contract work early in the spring.

Heavy drafters, 1700 ibs. and over	$225 @ 275
Light Dra's, 1500 to 1650	200 @ 215
Chunks, 1350 to 1500	180 @ 200
Wagon Horses, 1250 to 1350	125 @ 175
Green Mountain Range	60 @ 1.00

Publisher's Department

We suppose that the editor will in his department wish all of our readers a "Merry Christmas," which, however, does not preclude the business end doing the same. We feel very much in the Christmas mood as this is being written, because this nation is at peace with all the world and that as a nation we are enjoying a generous year of production. Speaking entirely from a business standpoint the year has been good on the average. With this journal it has been above the average in most respects. Our advertising subscription and book departments all show an increase, the subscriptions being the largest, but the advertising is also shows a fine gain, while our books have practically doubled in number and sales.

To commence the new year right we expect to have ready a large edition of the latest book by Prof. Wickson, "California Garden Flowers, Trees, Shrubs, Vines." This book will be handsomely printed and bound, well illustrated, and sell for $1.50 per copy, postpaid. We have been reading some of the proof-sheets and have enjoyed them and we know that readers of the book will find it to be a mine of information.

New subscriptions keep coming in. During the past week 234 new paid subscribers were received.

"California Poultry Practice," our new poultry book, is being called for in increasing numbers. Every farmer ought to raise more chickens and he should have this book.

SHIPPING AUTO EAST.

To the Editor: My folks in Madison, South Dakota, want the Ford Touring car for which I have no further use. It is in good condition. Would it be cheaper to sell it and let them buy a new one or ship it to them?—J. B., Santa Rosa.

The minimum rate from San Francisco is for 2000 pounds at $7 per cwt, or $140 for the auto. The rate to Sioux City, Iowa, is $120 if you care to drive the rest of the way. If you can sell the machine for $350, add the freight to that and buy a new one back east. If it is worn some, or if it is much bother to ship it, or if your folks are in a hurry for a car, you can afford to sell it cheaper.—H.]

SUBSOILING WITH DYNAMITE.

Practically all subsoils are rich in the mineral plant foods necessary to sustain plant life. Many varieties of subsoils are so physically constituted, however, that plants are unable to send their roots down into them to gather the mineral elements required for their growth. This is due to tight-soil conditions or to the existence of hardpan beneath the topsoil.

The question then is: How may the farmer secure the beneficial effects of deep plowing without mixing the subsoil and topsoil? As a writer in one of the agrcultural journals puts it: "The old-fashioned subsoil plow buried the surface soil as far as it was possible to do so and those plows were sent to the scrap pile with comments of an inflammable nature. Then followed the mole plow which broke up the subsoil without throwing it out of the furrow. This was the correct principle, yet the mole plow had to be discarded because of the extra labor and expense of using it.

Next I tried a deep tilling machine recommended to plow anywhere from 8 to 20 inches deep. The manufacturers of this machine claimed that it mixed the surface soil with the subsoil. If this beautiful blend were examined, the surface soil would be found most conspicuously mixed at the bottom; also no matter how well the surface soil is blended with the subsoil it will be ruinous to the field for years to come. Now if these machines were so built that the subsoil could be broken up, but not mixed with the surface soil, it would in many parts of the country revolutionize the whole farming industry and produce magical results. Summer fallowing with its disuse of land would be ended forever.

But with properly tamped charges of dynamite the subsoil is not only fully broken up, thus releasing and making available for plant food the sustaining mineral elements contained in it, but this subsoil is not thrown up on top of the ground with the exception of possibly a shovelful from each hole that is tossed into the air by the blast. As subsoiling holes are usually spaced about 15 feet apart, it can readily be seen that the mixing of this very small quantity of subsoil or hardpan will not injure the topsoil.

Subsoiling with dynamite should preferably be done immediately after harvest and at a time when the subsoil is fairly dry. If it is wet, the tendency of the blast will be to throw the subsoil up on to instead of fissuring it laterally from two to five feet beneath the surface; and is likely to pack the soil harder instead of loosening it.

By doing the subsoiling between harvest and frost, the soil is mellowed, made porous, and put into prime condition for the storage of water; and has the benefit of weathering through the winter season. The following spring it is in the best possible condition for planting; and because of the additional moisture stored in the loosened soil the crops are likely to have sufficient moisture to carry them through even an extraordinarily dry growing season.

[Many California subsoils have plenty of humus, so the writer's objections on that score do not apply universally; but the breaking of hardpan layers is usually very desirable.—Editor.]

BITTER BUTTER.

To the Editor: The last butter I made would not turn hard, although I churned for hours to see if it would, and was so bitter we could not eat it. The milk and cream is always good and sweet so I cannot imagine what the trouble may be. Will you kindly tell me cause and a possible remedy? — Subscriber, Fulton.

[Answered by F. W. Andreason, Secretary State Dairy Bureau.]

[I would say that the subscriber must have intended to state that the cream would not churn, for no person would churn a long time after there was butter in order to harden it. Over-churning would have the effect of making it greasy and incorporating a lot of butter milk.

In farm butter-making there are often difficulties in churning, especially at times when most of the cows are dry, and when those still milking are well advanced in the period of lactation. The milk at that time contains a large proportion of small fat-globules that are not easily gathered. To ripen the cream to a higher degree of acidity, to obtain cream from cows that have freshened within a few months, or to feed the cows more succulent food will sometimes remedy the trouble. If the cream is not churned sweet and fresh it should be properly ripened as quickly as possible. If cream is left during cool weather until it gets sour, the lactic acid bacteria will develop so slowly that they will be crowded out and too many undesirable bacteria that produce bad flavors will develop. This may be the cause of the bitter flavor of the butter.]

CHEAP PUMP IRRIGATION.

[Written for PACIFIC RURAL PRESS]

For 13 cents an hour F. T. Grotophorst of Santa Clara county supplies distillate to his 15 h. p. engine, which raises 30,000 gallons per hour to irrigate several orchards. The lift is 40 to 55 feet—lower in summer than in winter, and lower by 10 feet a year ago than it is now. It is also lower than it was in the dry seasons before so many pumping plants were installed. The pit is 44 feet deep and 5½ feet across, having been bricked up last summer by Mr. Grotophorst himself. A 10-inch casing was sunk about 110 feet below that. The centrifugal pump is run by a vertical shaft connected to the engine by a belt. The well. pump and engine ready for work cost about $900. The engine has been used on it for five years and has never given trouble. It has run 35 days without stopping. "The engine is generally all right," says Mr. Grotophost. "When folks have troubles with their engines, it is generally because they don't know how to run them."

The water supplied by this pump and engine irrigates six different lots of ground, containing 10, 8, 20, 6, 4, and 12 acres each, respectively.

On a smaller outfit, to pump the water for the house, a cylinder pump is connected by means of a belt from the engine to a large overhead pulley on the same shaft as a smaller pulley which is outside the engine house. Another belt runs over this to a suitable sized pulley which runs the crank on the pump rod. This works fine, but is too clumsy looking for Mr. Grotophorst, who plans to make direct connections by means of cog wheels.

The well-pit has been curbed with wood. What is the use of such curbing? It always rots out dangerously before being replaced, unless specially treated. This pit will soon be curbed by a circular wall of brick, which is permanent and easily placed. Such a curb in the other well has proved desirable.

Don't get too friendly with the bull. Sometimes such friendships result in permanent disablement of the owner.

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Vol. LXXXVIII—26 Forty-Fourth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO Saturday, December 26, 1914 LOS ANGELES

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California Beautiful, Next Year.

[Written for PACIFIC RURAL PRESS.]

California, the land of fire! Whatever those who named the State had in mind, the "land of fire" has a most glorious exemplification in the thrilling sweep of the prairie fires of native wild poppies in the meadows at springtime and far into the summer. Wherever you go, on barren mountain or fertile valley, along desert railroads and busy highways, in meadows and along cultivated fields, this flaming flower, of varied shades and sometimes curious markings, never a weed pest, makes devoted admirers even in the ranks of busy practical men.

San Francisco is to greet visitors to the Panama-Pacific Exposition next year with a blaze of California's characteristic flowers. On poppy day, December 12, the Call distributed 10,000 packets of poppy seed to school children and women, who organized in parties, and more or less systematically sowed wild poppy seed in vacant lots, parks, back yards, and all waste places. At least half of the seed was furnished by Superintendent John McLaren from the seed beds grown for Golden Gate Park. Mr. McLaren estimates that this amounts to about 7,200,000 seeds.

Los Angeles and San Diego are spending money for beautification, to add to the already alluring charms of Southern California. North and south of these cities and between them, everywhere, are preparations for a California beautiful, to greet visitors to our two great world's fairs of next year.

Now is the time to sow the seeds of all wild flowers. It is the time their seeds, naturally sown when the plants matured in early summer, begin to germinate and build a root-system that will enable the plants to burst forth in bloom in springtime before the winter moisture is gone. Mr. McLaren specially mentions the baby-blue-eyes (nemophila insignis) and the lupines of many varieties, which, without cultivation, revel in their blue pea-flower-shaped blooms. This special mention was not meant to discount any other wild flowers, and since, as Ernest Braunton of Los Angeles says, the popular taste is coming back to the simpler forms of flowers, it will be fashionable, too, to have wild flowers all about. Now is the time to plant poppy and other wild-flower seed since, according to Mr. McLaren, the late-winter-planted seeds do not have time to establish themselves thoroughly before dry up.

Favorite Flowers for Your Home Gardens.

Garden Flowers.—But what of the myriad of garden flowers that luxuriate in California?

Among these, perhaps, the ones that most deserve immediate attention are the bulbs. Those bulbs that have already been planted are sending roots into the rich, soft soil that has been prepared for them. But, better late than never, so if you haven't some daffodils, narcissus, jonquils, crocus, iris, and a dozen other varieties planted, now is the time to dig the ground deep after applying the nearest you can obtain to plenty of rotted manure. Don't leave any clods anywhere in the bed, on the surface or under it. Then a little compacting with a heavy roller will do it good to close up air spaces that would quickly dry out the roots near them. Plant the bulbs under double the thickness of dirt as their own thickness, having mixed sand in the bottom of the hole, if heavy soil. Then you can roll the bed again without injuring the bulbs. If you can't buy many, remember the experience of our publisher, Mr. Honeywell, who two years ago last fall bought two or three dozen bulbs of various kinds and now has so many that he is giving some of them away.

One seed house offers a collection of 100 first-class healthy bulbs for a dollar, including the following, or substitutions to suit the fancy of those who are to have gorgeous spots on their lawns or about their houses next spring: 15 crocus, 6 hyacinths, 10 large California snowdrops, 6 new tulips, 10 long-stemmed tulips, 10 ranunculus, 15 Spanish iris, 6 anemones, 10 ixias, and 6 narcissus.

Among flowers universally loved, but not so much grown, are lilies of the valley, which may be planted best this month or next. If our readers have a cool, shady, moist spot beside the house or near a spring, you may have these sweet-scented little bells in plenty. Fine sand mixed in the soil before planting helps. Easter lilies planted now will not bloom for Easter, but will be welcome flowers along in the summer. Callas may be so planted in California as to have the lilies the year around if they be protected with heavy cloth from frosts.

More loved than lilies of the valley, because more available to all, are the violets which bloom heavier the more you pick. Only a small bed of these is necessary to supply yourself and your neigh-

(Continued on page 658.)

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco
LOS ANGELES OFFICE, 239 South Los Angeles St.

[illegible]R PER YEAR IN ADVANCE

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Frank Honeywell - Publisher and Manager
W. H. Schrader - - Advertising Manager
D. L. Schrader - - - Subscription Manager
R. E. Hodges, J. C. Loomis - - - Assistant Editors

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., December 23, 1914.

Stations.	Rainfall Data			Temperature Data Past Week	
	Past Week	Seasonal to Date	Normal to Date	Max'm	Min'm
Eureka....	.40	15.08	14.67	67°	34°
Red Bluff...	62	7.90	8.72	66	32
Sacramento.	1.05	3.97	6.03	64	34
S. Francisco.	2.02	6.24	6.90	66	40
San Jose....	1.26	5.36	5.18	66	34
Fresno.....	.69	2.28	2.99	60	28
Indep'nd'nce	.00	.52	2.91	38	2
S. L. Obispo.	1.69	5.54	4.94	64	42
Los Angeles.	2.06	4.21	4.13	64	44
San Diego..	.84	3.91	2.47	68	48

The Week.

And this is the way it comes about that the Rural goes to the reader this week be-wreathed and garlanded like a prize ox at a county fair. Last week the publisher announced, in his little writing-place, on the back-door step of each issue, that the editor of this journal had made a new book on "California Garden Flowers" and that the printer would be finished with it in a very few days It was hardly to be expected that this announcement would make a very profound impression on the general public; at least, so far as we have observed, it has not affected the European war. We do, however, expect that George and Bill and Nick and the rest of them will hurry to get early copies to throw at each other—for it is going to be a very weighty affair, and it will be hard to make war successfully without it. But though the publisher's announcement did pass without public casualty, it has raised something very warm inside this publication-joint. All the members of the staff, very much excited over the fact that the editor should go off by himself and make a new book, without an editorial consultation, resolved excitedly to beat the book to the public eye by making this issue of the Rural a battle of flowers just to show that every one of the staff is competent to make a flower book—if he had only thought of it in time. And so we find the heavy fruit-writers fussing in the posy-beds and the heavy stock-writers planting ornamental trees and flowering vines around the bull-pens and, if sufficient notice had been given, we expect the poultry-writers would have been weaving floral cushions for setting hens.

But though this highly decorated issue of the Rural may have come about in some such way, that does not interfere with its being of a very desirable character from all points of view. It shows the holiday spirit which is rife this week: it suggests that it is just the right time to besiege all the seedsmen advertising in the Rural with requests for catalogues and orders for seeds and bulbs and all nurserymen with orders for desirable plants and trees. As is suggested in a special article on another page, it is especially desirable that more beauty-planting should be done this year than ever before. Everyone should do something to improve his environment. It may offend ultra-honest souls of course to think that we propose to decorate the State unduly to produce an impression of cleanliness and beauty beyond our usual excellence, but such sensitive moralists must remember that we are preaching, not alone for others, but for ourselves. If we bring California highways and habitations to the verge of perfection in condition and aspect, there is a good promise that we shall all love it so much more that way that we will never allow our environment to lapse again into the neglect which here and there is manifest. Therefore, an extra effort for beauty this year really becomes a highly moral effort and the special floral character which the juniors of the staff have given this issue, without our participation, is eminently timely and desirable

What It Is All About.

But since the publisher has shot the floral cat out of the bag by his modest announcement in last week's issue, we are obliged in self-defense to tell the reader more about the new book. The name of it will be this: "California Garden-Flowers, Trees, Shrubs and Vines: Being Mainly Suggestions for Working Amateurs," etc. The book will aim to occupy a field in California horticultural literature, which has not yet been entered by an author writing wholly from an amateur's point of view. We have creditable local books on the professional aspects of gardening, elegant in style, suggestive in method, and correct in standards of taste and beauty, but none of them goes right into the dirt with the working amateur, telling him the little things which he should know and explaining the reasons for doing them. This book is therefore introductory to the professional treatises, whether they treat of designs and cultures, or whether they have particularly botanical bearings. It does not aim to displace other California books, but to open a wider field for them. It aims to tell the beginner in California, whether he be a scholar struggling with his school-garden, or a suburban gazing vacantly on his residence lot, or the farm-home maker, who is puzzled to translate his experience with teams, plows and pasture fields into trowels, pruning-shears and lawns, just what to do to make garden-soils, grow plants and surround his abode with beauty under the peculiar climatic conditions of California. The writer feels some confidence in the undertaking, for it is nearly forty years since he began doing things for himself with California soils and garden plants, and he has never ceased doing such things. Besides, he has had, during all that time, what may be called a working-acquaintance with others who have been thus employed in all parts of the State, and has made mental and written notes of their successes and failures—thus educating himself in the broad field of the amateur gardening of California. Whether he has made good use or not of such exceptional opportunities, it is for the interested public, as a jury of his peers in amateur work, to determine.

A Floral Crown for Our 1914.

But there is another and a broader reason why the juniors of the staff are justified in weaving garlands around this issue of the Pacific Rural Press. It is the last issue of the Forty-fourth Year of this journal—the greatest year which the publication has seen since its beginning. It has been a year of depression and distraction in many regards, but in this little corner of the publication world there has been peace and quiet work and progress beyond all earlier achievements. This is chiefly due to the personal devotion and large view of the publisher and the loyalty of his well-organized business staff. But, of course, the effort of the publication staff could not have the character of permanent command of upbuilding patronage were it not strongly grounded upon editorial quality, which the public recognizes as intelligent, conscientious, accurate and practically helpful to producers. To this achievement in pleasing and satisfying readers, the juniors have largely contributed by their own energy, insight and love of the cause, and by their free use of individual initiative, which they amply have and without which this writer counts an assistant less of help than of hindrance. And so we again are glad that the juniors have twined garlands to adorn the closing piece of the year's work. It is our pleasurable duty to so dispose the tasteful decoration that it shall rest in due measure upon the shoulders of those who have largely made the work possible.

The Rural as a Helpful Concern.

A careful and conservative person, whom we have known for many years as well-informed and influential in California affairs and as a thoughtful, discriminating reader of scientific and industrial publications, caught us up as we passed him the other day, with this remark: "That last issue of the Rural Press was unusually good and will be of much service to the State. You seem to be telling every kind of a farmer of something which will help him in his work." We thanked him cordially and sped along, but the remark lingered with us and enlarges and seems to become the whole platform of our endeavor—to help every reader, if possible, to do a little better what he finds for himself to do to carry his load in the world: to help him in his environment and in his relations to the interests and activities of other men, so that he shall have a square deal and a fair reward: to help him, through better relations with others, to be himself a better man and citizen. Helping those who desire help in such ways is a good thing for the State, is probably the assurance which our friend desired to give us as a holiday greeting. To have and to hold this journal squarely on such a platform as that is the sincere ambition of all who are concerned in its publication, and all are working toward that end. It seems well enough once a year to make such a declaration for the sake of fuller understanding between our readers and ourselves: well enough also from the fact that we speak now to thousands who were not listening a year ago. The policy of the present proprietary has notably increased our constituency: halving the cost has perhaps quadrupled the circulation, and to do

this without catch-penny contrivance, simply on the fullness and quality of the work and with the test of helpfulness applied to both literary contents and business announcements—this seems to us a notable achievement and one which really has State-building and man-building relations. It is not at all strange that business firms who hold themselves in the world for the good of the world, as well as for their own prosperity, find the Rural Press the best line of approach to the class of producers to whom they wish to minister. How the editors have done their part in this progressive policy of the journal can be inferred by a glance at the index which fills the closing columns of this issue. It indicates, in most condensed form, the range of topics set forth on the 680 pages of the volume—which is the largest number of pages ever issued in the second-half of a year since the publication commenced. And now, while all governmental forces are being rallied to protect the consumer, we point with pride to the fact that this publication is furnishing its consumer nearly twice as much for half the money he formerly paid. And by our consumers we do not refer to those who persist in building fires with this journal. For such as they a special edition printed on asbestos is in contemplation. Bind your volumes with twine and a sack-needle and have an agricultural encyclopedia for California always at hand.

Are You Putting in That Wheat?

It is still early enough to put in wheat in some parts of the State: is everybody doing it? They are trying to do it in other States, but conditions seem to be against such a large product as the world needs. It is announced from Washington this week that the Department of Agriculture's estimate, based on condition figures, of production next year, is only 580,000,000 bushels, although the area sown this fall, 41,263,000 acres, is the greatest ever planted in the United States. They have had bad conditions since the fall sowing, and the condition of the winter wheat crop on December 1st is estimated at 88.3 per cent of a normal crop, which compares with 97.2 per cent a year ago. In the previous ten years the condition on December 1st has averaged 90.3 per cent, and the outturn of the crops has averaged about 14.4 bushels per acre on the planted area. This makes the outlook on December 1 below the average of the last decade, and the prospect for the crop is about eighty million bushels less than in 1914, which is estimated at 675,623,000 bushels, by far the largest amount ever produced in one year. This means that there is little chance of having enough wheat next year with Europe largely out of the growing and full of hunger. It looks like a lesson for a wise man.

Spud Bread in Germany.

When it is announced by the Government at Washington that the principal farm crops of 1914 in this country are worth nearly five billion dollars, the amount seems large until one sees that the cost of the European war at the end of the present month will also be five billion dollars—not including destruction of property. The reflection that as much has already been spent in Europe simply to kill people as this great nation has produced in a whole year by its world-blessing agriculture—it does make one sad for the world. And of course this takes no account of the loss of life, sorrow and misery of the living and the suffering they must still endure. It has been announced that Germany, which is worst situated to get food from the outside, has food enough to carry her people until another crop can be harvested, but strenuous efforts are being made to conserve the supply. The government has ordered that all millers shall grind wheat so that 75 per cent of it becomes flour, thus saving the waste in the grinding of fine flour. The percentage for rye is 70 per cent. All bakers are ordered to mix with wheat flour at least 10 per cent of rye flour. Five per cent of potatoes must also be mixed in bread made exclusively of rye flour, and this may even be increased up to 20 per cent. The feeding to animals of grains which can be made into bread has also been prohibited. Owing to the fact that potatoes are short this year, their use in the making of spirits is limited to 60 per cent of the usual amount. These facts may bring to all a realizing sense of the duty and opportunity to produce in this country a maximum amount of staple food supplies.

Queries and Replies

Querists must give name and address.

The Corn-Ear Worm.

To the Edtior: I have been told that by hanging a lighted lantern, with a pan of tar underneath, at night, in a field of sweet corn, as the corn was silking, that worms will not trouble the corn. Is there any truth in it?—D. M. A., Sutter.

All kinds of such lures have been tried, and although they catch many moths of many kinds, they do not save the corn.

Picking Oranges and Lemons.

To the Editor: I would like to know when is the best time to pick oranges and lemons around Fresno. Is it best to leave them on the trees to get as ripe as possible (just so they do not freeze), or should they be picked and stored away to ripen?—H., Sanger.

Oranges should be picked whenever the price is good, after they get the proper relation of sugar and acid in the juice. This is now being determined by experts for the packing houses or by the growers themselves, before shipping, as outlined in the Pacific Rural Press of Nov. 28, page 538.

Oranges are handled fresh from the trees, and do not improve by storage though they may be held a limited time without cold storage in a place which is cool and not too dry. Lemons can be picked when of satisfactory size without reference to ripeness and allowed to get toughness and silkiness of skin before shipping or selling.

Mulberry and Persimmon.

To the Editor: I have been told that I can bud or graft a persimmon to a mulberry tree. If so, when will the right time be? I would prefer to bud, if possible.—Subscriber, Antelope.

We never heard or saw anything which would warrant us in believing that such practice would succeed. If you wish to try, put in the bud as early as you get a good dormant bud on next summer's growth and while the stock has good active sap-flow.

EFFECT OF ASHES ON MANURE.

To the Editor: I have read that one should not put both ashes and manure on the ground at the same time, as one counteracts the other, If several heavy rains fall after putting on ashes, will it be all right to put on manure?—A. F., Korbel.

Fresh wood ashes will set free the ammonial contents of the manure to some extent and thus cause a loss. But if you cover both into the soil, the soil will catch what the ashes set free. Leached ashes, such as you describe, will not act in that way to any extent, and you can go on manuring as you propose without apprehension.

Effect of Processing on Nutritive Value of the Olive.

To the Editor: When olives are put through the lye process to remove the bitterness, what takes place? Is any of the oil removed, or is it emulsified or saponified, and retained by the skin of the fruit, or do we lose a proportion of food value, and simply eat them as a sort of relish? I am told that there is another process for removing the bitterness which does not require lye.—F. R. W., Denair.

So far as we know there has not been much work done in the way of determinations upon the basis of which your questions could be definitely answered. The University Experiment Station has the subject in hand in connection with the manufacture of "olive paste." This would act upon the soluble substances in an aggravated way probably, and it will be necessary for them to determine the nutritive relation of the paste to the fruit from which it is made. This will probably be available next year.

Theoretically, the lye does saponify some of the oil and the soap is taken out with the water, but practically the amount is small and does not go at all near what you fear. The processed olive is still vastly nutritive as a food and is not merely a relish. Theoretically, also, the loss even of this modicum of oil can be avoided by using the water-soaking process instead of the lye, but practically this exposes the fruit to decay-germs, which cause softening and lack of keeping quality, and it engenders a lot of labor which the lye-process, by its speed, avoids. Besides, though it may not attack the oil, no one knows what soluble nutritive substance the water-soaking may extract along with the bitterness, so we are not at all sure that it is innocent of robbery. This will be determined in the connection with the "paste" problem, already cited. So far as knowledge within our ken goes, your question must be regarded as largely speculative.

No Coffee in California.

To the Editor: Please let me know if the cultivation of coffee (Coffee Arabica) has ever been tried in the United States; if so, where, and with what success? Any information you are able to give me upon this subject will be highly appreciated.—E. F. T., Red Bluff.

There is no coffee produced in the continental United States. In California, during the last forty years, coffee trees or bushes have been planted here and there, all the way from Berkeley to San Diego on the coast and in some interior valleys also. None of these have ever lived long. Coffee is a strictly tropical plant and can endure no frost. Besides, if we could get it out of all frost, it would probably refuse to thrive in our dry summer heat, for tropical air is always moist as well as warm. Besides, again, there is no occasion for us to think of coffee. The American tropics could easily produce more than the whole world could use, and has to hold her output under check for fear of starving herself to death. The tropics of the other hemisphere has also capacity which cannot be fully utilized.

Practical Fruit Pruning.

[Written for PACIFIC RURAL PRESS By J. S. Rhodes, Modesto.]

Another deciduous fruit season has closed and the experiences of the fruit growers of Sacramento and San Joaquin valleys have varied greatly.

One grower can be seen converting a well-matured orchard into wood, and another can be seen preparing to plant yearling trees from which he cannot expect any returns for several years, but which will require a yearly expenditure of money and labor to produce a profitable orchard.

The wanton destruction of a matured orchard of a good variety of fruit, that has required years of time, labor, and money to produce, is nothing short of a crime against horticulture. There ought to be some way to prevent it.

The chief reason for this waste of time and capital, we believe, results primarily from ignorance of the few fundamental principles governing the the growing of a tree that will produce profitable fruit.

Well defined methods of tree and fruit culture have been established by our University through their Experiment Stations. Experiments have been carried on by practical men in the field in actual touch with the tree and its environments. Even to an inexperienced fruit man a reasonable degree of success can be assured if he will only get in touch with this information. All instructions must necessarily be well mixed with good common sense.

Our experiences in fruit growing has forcibly demonstrated the following factors to be the fundamental principles that must be intelligently and consistenly followed if you want a profit on your orchard: (1) Pruning, (2) Cultivation, (3) Fertilization, (4) Spraying, (5) Harvesting and Grading for market, each to be well mixed with a liberal supply of good common sense.

Pruning Young Trees.—Buy good clean, vigorous yearling stock. You can buy it more cheaply than you can grow it. Deal with well-established nurseries and follow their instructions in planting out your stock.

Low heading of the tree is very essential, not to exceed 18 inches from the ground. This stub will throw out the first year a number of laterals, the length and vigor of the growth will depend upon the location, food in the soil, and cultivation. Select 3 to 5 of the most vigorous laterals, cutting off one-half to two-thirds of their growth. They should be selected so that each one is three to six inches above the other and well arranged around the stub. Each branch the second year will throw out a number of laterals. Select 3 or 4 of the most vigorous on each and cut back as the previous year, cutting out all the rest close to the laterals. Follow this system throughout your yearly pruning and you will establish a firm vigorous tree with an open center and one that will carry its load of fruit near the ground and seldom need a prop. Handy to prune, spray and harvest the crop. Permit the sun to help destroy and prevent disease and give color and size to your fruit; less surface to spray and for the lodgment of disease.

In California the trade winds tend to lean your tree out of balance. You can help this by cutting to an outside bud on the Northwest at Modesto or windward side of the tree and to an inside bud on the opposite side as well as by removing small laterals from the tree.

Work Older Orchards to Same Form.—If you have an established orchard, prune for an open center in your tree, cutting out all but 3 to 5 laterals or arms, keeping in mind the arrangement of the arms on the body to keep the tree balanced properly. I do not hesitate to cut any sized limb off a tree if I consider the limb unnecessary. I have cut two-thirds of the growth of a tree off in one year and had the tree produce four good crops in succession with a good setting now of large healthy buds for the fifth crop. I would rather have a year's growth of wood, full of strong healthy vigorous fruit buds on three to four arms of a tree than six to ten arms full of weak buds that are easily killed by light frosts or easily blighted by other causes which make them drop off in the summer.

Top and Roots Balanced.—Keep your tree-top well balanced with the root system. This you can judge partly by the growth of the shoots on the tree. A properly balanced root system and top system will put the season's growth principally on the laterals already established and not tend to throw out a large amount of water shoots.

Study the Tree.—In pruning you will find that the growth on your trees differs greatly. Now for some of that common sense you have; always keep it handy. If you have a large growth of new wood you can be confident you have one of two things, or may be part of both, a large vigorous root system in medium good soil, or a medium root system in a soil full of plant food. These conditions will insure you a good crop. Find out first the reason for this growth before you prune if you want the best results. You can have a liberal supply of fruit wood on such a tree. It will mature a large crop of fine-colored fruit with few culls and make you glad you are the owner.

Your next tree may not have half the growth of fruit wood. Prune rather severely. Reduce the number of laterals if there are five or six. If there are three or four arms on such a tree, and the tree seems healthy, you might just as well fertilize it if you want a profitable tree. More food for the tree or less wood will increase the fruit yield.

If you find disease cut it out if possible. In California you can produce a new arm or a new top in one year that will yield a reasonably heavy crop the next year, if you are living up to your opportunities. If the body of the tree is diseased remove at once and destroy by fire.

Shearing is Not Pruning.—Don't blindly follow a set rule in pruning each tree, as a majority of the pruners do in California. Shearing is not pruning. Paint all large cuts on your trees to prevent lodgment of disease.

We use as it were a double system. About one-half of the previous year's growth on a mature tree is cut back one-third to one-half and the other half back to about six to eight inches from the arm. The first leaves plenty of buds for fruit, the second promotes new wood growth for the coming crop. The larger the growth your trees make, the more successfully you can use this system.

We firmly believe that this system will work in any part of California provided proper fertilization is supplied. There are too many fruit growers who want something for nothing, who are a barnacle on the fruit industry, and who are a stumbling block to its success, and injure the market with inferior fruit.

If you do not have fruit growing enough to study your trees and give them the best of attention there are two reasons why you should abandon it. First, financial, for your own sake; 2nd, for the sake of the industry. If you cannot do the practical work yourself, see that it is done.

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Citrus By-Product Possibilities.

[From Address by C. P. Wilson, of U. S. Dept. Agr., at Fruit Growers' Convention.]

The large piles of oranges thrown in the washes almost every year because unfit for the market, and the scarcity of high-grade oranges and lemons on the local markets because of the competition of low-grade fruit brought in by peddlers, make it evident that something must be done to remove all the low-grade fruit from the fresh fruit market and turn it into some form that is not perishable and which finds a ready and profitable sale.

There are a great number of by-products that can be made from citrus fruits, but the things that can be made and marketed in quantities large enough to use most of the low-grade fruit are not so numerous.

Orange By-products.—From the orange, various confectionery products or preserves such as marmalade, canned orange pulp or slices, candied or crystallized peel, and crystallized sections or slices are articles that have been made and in some cases have appeared on the market. Orange marmalade seems to be used quite a bit; but the fact remains that whatever has been done along this line has not appreciably decreased the annual waste in discarded low-grade fruit. This is the real problem.

Men in the trade seem to think that the way the greater portion of the low-grade oranges will be utilized is in the manufacture of orange oil and a bottled juice that has a real fresh orange flavor. Orange oil is a staple product the world over and normally commands a somewhat higher price than lemon oil. The market for this article is already established and the demand is always good.

Tangerine Oil.—The tangerine crop is yet too small to require attention as a source of by-products, but we may say that an oil can be produced from this fruit that finds much favor with makers of soda fountain flavors. Some of this product made from frozen fruit in the laboratory was submitted as a sample to a maker of soda water and he has been trying to get more ever since at $3.50 a pound.

Lemon By-products.—The staple products of low-grade lemons are lemon oil, citrate of lime, citric acid, candied peel, peel in brine, and raw or concentrated juice. Lemon juice tastes like the fresh fruit would and meets a long-unsatisfied demand. The concentrated juice is merely one way of getting the raw material to the citric acid factories. Calcium citrate, which is also called citrate of lime, is the intermediate product in the manufacture of citric acid. The "peel in brine" is used in making candied peel, the brine being a temporary preservative to facilitate the transportation of the peel from the place of production to the makers of the candied article.

Mostly Handmade.—The various by-products have so far been produced mainly in Italy and the West Indies where labor is very cheap. It is a very different problem in California where labor is high-priced. The proposition resolves itself mainly, therefore, into doing by machinery what has always been done by hand. A number of devices have been invented for producing oils from citrus fruits by mechanical means. It is likely that the amount of oil actually produced in this way is well over the 10,000 pound mark. The oils so produced have been found to differ from those produced abroad, but whether they are inferior or superior has not been determined. From personal observations I do not think the California article will be found inferior. When there were a great many frozen lemons on hand a short time ago the Citrus By-products Laboratory made and sold to a local bakery some fifty pounds of lemon oil. This oil gave perfect satisfaction and more could have been sold if it had been available. We are informed that during that same season nearly 5000 pounds of lemon oil were produced in this State and marketed. Unfortunately we have been unable to trace this to the consumers to get their opinion of it, but apparently it was absorbed satisfactorily through the regular marketing channels.

The difficulty thus far encountered with the mechanical processes for the extraction of lemon oil has been that hardly more than half of the oil present can be obtained. The yield by machines does not equal that obtained by the hand method.

I may say that the chief effort of our laboratory during the present season will be to increase the yield of oil.

From figures given by Mr. Chace, we find that the yield of citrate in Italy is about sixty-two pounds per ton of fruit, the citrate containing about sixty-four per cent of citric acid. With modern machinery and economical management the yield can be increased twenty to twenty-five per cent and the purity of the citrate can be raised to sixty-eight or seventy percent instead of sixty-four per cent.

The manufacture of citric acid in this country is practically in the hands of two houses, both on the Atlantic coast. They are anxious to find a supply of citrate, but naturally would not encourage the manufacture of citric acid in this State.

Local By-products Factories.—We have a great many inquiries about the possibility of erecting and operating small by-product factories wherever there are lemon packing houses. We do not believe this policy would ever prove profitable.

The present lemon crop is about one hundred thousand tons a year. It is estimated that such a crop will yield about five thousand tons of fruit of a grade that should be made into by-products. This figure will probably be doubled in the next five or six years.

A by-product factory to operate efficiently should be in use all the year around as steadily as possible and it is much more economical to operate on a large scale, say ten to twenty-five tons a day, than on a scale of one or two tons of fruit a day. You will see that, considered from this point of view, one or at most two or three fair-sized factories can handle all the available lemons and as soon as methods are devised for doing so could also take care of a large part of the low-grade oranges. These questions will no doubt adjust themselves as the industry develops, but I think the idea of starting very small local plants is to be discouraged rather than otherwise. Co-operation will probably solve this question when it comes up just as it has solved others of even greater importance

To give an idea of the value of lemon oil and citric acid, prices are obtained from the "Oil, Paint and Drug Reporter," covering a period from 1906 to the present time. The price of citric acid has fluctuated from 35 cents to $1.50 a pound. The lowest yearly average is 38 cents and the highest is 50 cents a pound with the average for the period 1906 to 1913 inclusive, 41½ cents. The variation is caused mainly by the the size of the crop in Italy and the West Indies.

The price per pound for lemon oil has varied from 66 cents to $5.00 during this period, with the low yearly average 84 cents and the highest yearly average $3.62. The average for the whole period is $1.50, or with the unusually high average of 1913 omitted, it is $1.20.

The normal price for citrate of lime containing 64 per cent citric acid is about $0.15. If the acid content is above 64 a bonus is paid.

Who Uses By-products.—With the exception of egg and milk drinks, practically every beverage served at soda fountains contains citric acid. Magnesium citrate, iron citrate and many other drugs are made up in part of citric acid and considerable quantities of it are used in calico printing. Lemon extract is the best known form in which lemon oil gets to the general public, but there are many flavors and perfumes part of whose aroma is due to lemon oil.

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Hungry Foreign Fruit Markets.

[Written for PACIFIC RURAL PRESS.]

Retail prices of California prunes (much preferred) in Brazilian markets are 65 to 75 cents per pound, according to a gold mine of information where to sell fruits, just issued by the Oregon State Horticultural Society. It is compiled largely from U. S. consular reports from countries all over the world and for fruit of all kinds, fresh, dried and canned.

One outstanding feature is the high price at which fruit is retailed —fruit which brings the western American grower but little more than the cost of production.

Much of the emphasis in the report is placed on the extra expense incurred by handling export fruit through New York commission houses, who of course must be paid for their trouble, and the freight to which also adds to the retail price.

As a general rule, the report shows European markets (not on account of the war) to be less likely to become future markets than South America.

Brazil especially, with one city of a million population and another of 400,000, and Venezuela too, would offer a tremendous outlet for our fruit if it could be landed there at more livable prices. Fresh apples sell at 10 to 15 cents each and are in great demand from people who can pay the price. They would be in much greater demand if put within reach of more pocket-books.

Reduced retail prices could be made very profitable to California growers by stimulating consumption if we had cold storage boats direct to Brazil via Panama and if we did business direct with Brazilian merchants. The consul notes that the quality of fresh fruits received from the Pacific coast (even via N. Y.) is usually satisfactory, while that from other parts is not—partly due to the difference between the carrying qualities of box and barrel packs.

An outstanding feature of the reports from all the continents, including Australia, is that boxed fruit is greatly preferred over barreled fruit.

With peaches, smaller packages and careful individual wrapping are required. Most English peaches are raised in hot houses, and the high prices greatly restrict the sales. South African peaches, 17 days on the road, sold in England in Feb. and Mar. at $1.46 to $1.83 per box of 15 to 24. The only variety on the London market is the Elberta.

American apples used to sell in Mexico even to the poorer classes, but shipment to that country in its present unsettled condition puts that market out of the question now. A peculiar condition is indicated in Norway where "apple imports are restricted owing to the cheapness and general use of oranges, which sell in the winter season for 3 1-2 to 8 cents per pound."

Argentina uses California dried fruits shipped via Tehauntepec and New York, "the demand being the largest for peaches," which when home grown there are of inferior quality.

Prunes in southern Europe practically fill the European demand for small sizes so that the imports are mostly for 40's to 60's.

The Uruguay "market for dried fruits may be materially enlarged by properly directed efforts."

These are a few of the high points in the report suggesting the possibility of enlarging our markets and the world consumption of our fruits to a very optimistic degree. It remains for our fruit growers and shippers to take advantage of the possibilities by improvements in transportation, and by direct business communication with the countries that will use great quantities more of our products than they now do.

DRYING PEACHES OFF THE GROUND.

[Written for PACIFIC RURAL PRESS.]

On rainy days, when we can work inside, will be a good time for those of us who intend to work up a private dried fruit market next year, to prepare equipment for drying, such as A. Thiele of Fresno county uses. He has 7,000 trays which cost him $840, so don't say the plan is impractical. Instead of setting the trays on the ground, he has low "trestles" or "horses" on which they are set at such height that the boys who handle them need not bend over much to pick them up. They cost a little, but have more than compensating advantages, especially for those who have a private trade or a discriminating trade.

Avoids Dirt.—The heaviest of the plentiful dust of the dry season sweeps along just above the ground ready to make mud of the fruit juice of the freshly sulphured peaches, etc.

When trays are set on the ground, they often collect dirt on the under side, especially if the peaches are carelessly placed so the juice runs out of them. When the trays are stacked the dirt gets mixed with peaches and the consumer tries to eat it.

But if the fruit is on trestles it escapes this and most of the lighter dust too.

Avoids Livestock.—There are often fowls on a farm which, in wandering among the fruit trays, trample over them and the fruit. If stock gets loose, trays and fruit are spoiled. Little danger of either when trestles are used.

Avoids Mold.—In a peach drying yard near Merced we found this summer two men busy picking out the molded fruit, for occasional alfalfa plants on the drying ground had kept the fruit moist. The drying ground had been plowed and harrowed to get rid of the green stuff before fruit drying time came.

With trestles, it could have been allowed to grow and produce a crop. Air would have circulated under the trays and a heavy loss avoided, both of peaches discarded, labor of discarding, and disappointment of consumers who probably got some that were overlooked.

Besides the improvement of the peaches, which is sorely needed to increase consumption and make a market for this dried fruit, there is a considerable saving of labor. A man can work faster when his back isn't aching from bending over and lifting. It takes less time to lay out the trays and to take them up again when the bending is eliminated. His young sons do this work for Mr. Thiele.

Attracting Desirable Birds.

Many birds that are economically valuable may be attracted to particular localities by the construction of bird houses. The importance of birds as insect destroyers is being more appreciated every year and as a result there has been a decided movement to protect and make neighbors of them. Many birds, if furnished a safe retreat, will more than pay their rent to their landlords.

An ordinary tomato can with a circular piece of board fitted in one end will make an excellent house to attract bluebirds or wrens. The board should have a hole in its upper half to serve as an entrance and the can may then be hung by wires to the limb of a tree or fastened to a crotch. A new farmers' bulletin (No. 609), entitled "Bird Houses and How to Build Them," has been issued by the U. S. Department of Agriculture, and in it are outlined plans for bird houses of all descriptions from the simple tomato-can house to a most elaborate martin house with doors that open and close.

Simple bird houses have long been made in the Southern States from gourds. The entrance is in the side and there is a drain hole in the bottom. A piece of wire through the neck for mounting it completes the house. A number of gourds thus prepared and strung on a pole with a cross piece seems to make a satisfactory tenement house for a colony of martins. Used singly they are equally well adapted to wrens and bluebirds. While gourds are not durable when exposed to the weather, they are easily replaced.

Ordinary wooden boxes, if clean, can be made into simple bird houses by merely nailing on a cover and cutting out an entrance hole. Such makeshifts are rarely weather-proof and are never pleasing to the eye.

Branches containing real woodpecker holes, when obtainable, are perhaps the best attraction that can be offered most house birds in the breeding season. By carefully fitting such a branch to a fruit or

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shade tree its foreign origin will scarcely be noticed.

House for Swallows.—A house especially for the use of swallows may be set on a pole or tree stub. It is a simple box-like structure with a gable roof. The foundation, floor, and posts are first put in position and then the four sides which have been already fastened together with the gable roof are placed over the floor and posts. A small circular hole just under the gable permits the bird to enter. This house can be cleaned by simply lifting the box from its base.

English Sparrow Not Encouraged. The English sparrow, whose attacks often drive other birds away from the neighborhood, will not be encouraged by the careful landlord. The Department's Farmers' Bulletin (No. 493), entitled "The English Sparrow as a Pest," gives recommendations to those who wish to free their premises of this undesirable bird.

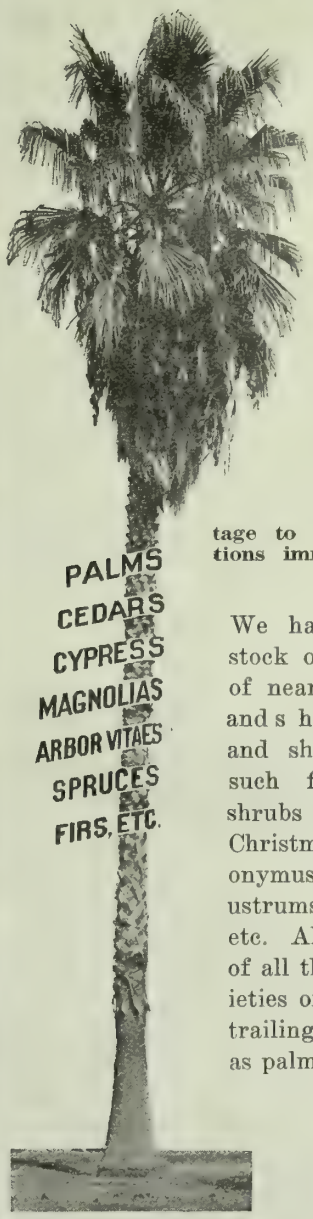
There are other undesirable prowlers that seek to injure desirable feathered tenants and must be watched by the careful landlord. Cats and large snakes are enemies of birds, the former perhaps killing more than any other mammal. Trees and poles supporting houses should be sheathed with tin or galvanized iron to prevent these enemies from climbing to the nests.

Location of Bird Houses.—The fact that there is a limit to the possible bird population on any given tract must be taken into consideration in building houses for them. When the probable tenants have been decided upon, the selection of sites is in order, for the site often decides the style of house that is to occupy it. Birds often have decided notions as to the proper surroundings for a dwelling. Martins prefer to breed near houses, but not within 20 feet of trees or buildings. Bluebirds are inclined to select orchards or pastures having scattered trees. Wrens, thrashers, and catbrids live in thick shrubbery. Robins like trees with sturdy trunks and branches. The new publication gives a great deal of information about these individual preferences of birds.

In the final placing of bird houses, care should be taken to have them face away from the winds prevailing in stormy weather. The strongly developed homing instincts of birds can be relied on to attach them to the neighborhood where they first saw the light, and the identical pairs which nest in the houses provided for them one year will often return the next season to enjoy the same bounty and protection.

There are other means of attracting one's bird neighbors besides building houses. In winter if they are supplied food they will haunt the premises and the new bulletin gives plans for an adequate shelter where food may be left. In summer still other means must often be sought to make them sociable. On warm days they particularly appreciate fresh water for drinking and bathing. A shallow pool of varying depth, if only a foot across, becomes a center of attraction for all the birds in the vicinity, and it may be made with little effort and material; only a small amount of cement is required, or, if that be lacking, a pan with stones in it set in the ground will be equally serviceable.

Ornament your home grounds



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We have a splenlid stock of ornamentals of nearly every kind and s hape, including and shape, including such fine evergreen shrubs as Box Wood, Christmas Berry, Euonymus, Laurels, Ligustrums, Oleanders, etc. Also a fine stock of all the leading varieties of climbing and trailing vines, as well as palms.

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Our stock comprises a splendid assortment of roses, grown under ideal soil and climatic conditions. We have all the best varieties, as well as many new roses imported from Europe.

TREES

Everything that grows for ORCHARD VINEYARD GARDEN

The Fancher Creek Nurseries are generally acknowledged to be the largest and to have the finest and most complete stock of fruit and ornamental trees on the Pacific Coast.

THIS season promises to be a very active one, and from the way inquiries and orders are coming in, we anticipate a very large demand. Therefore, it is advisable for you to make arrangements as early as possible for the stock that you expect to plant. If you have not entirely decided upon just what you wish to set out, we will be very glad to advise with you—absolutely free of charge—as to what is best suited to your locality and what will most likely prove to be the most profitable varieties at the time when they come into bearing.

Our more than thirty years of experience in growing nursery stock, not only for our customers, but for our own requirements, enables us to advise you intelligently, and we can conservatively say that the stock which we have for sale this year is in splendid shape and warrants your careful consideration.

Calimyrna FIGS

—the world-famous Smyrna fig of commerce.

This is the fig to plant for sure, profitable crops. A prolific bearer — always brings good prices.
We can also supply the leading varieties of Adriatics. **Ask for special FIG BULLETIN—FREE.**

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PRUNES
PEARS
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QUINCES
NECTARINES
PERSIMMONS
GRAPES, BERRIES, etc., etc.

Write us today for prices and suggestions.

Don't put off getting in touch with us until you are ready to plant. No matter how large or small a quantity you may be figuring on setting out, it will pay you to get our prices and suggestions. Send us your list and let's talk it over.
Our new 1914-1915 illustrated price catalogue will soon be off the press. If you wish a copy send us your name and address now, and we will send it to you as soon as available—free.

Fancher Creek Nurseries

Paid Up Capital $200,000 **Geo. C. Roeding, Pres. and Mgr.**

Box 18, Fresno, California

All Stock Guaranteed True to Name

ROEDING TRUE TREES FRESNO, CAL.

Roeding's Trees Give Satisfaction

Capitalized Raisin Co-operation.

[Written for PACIFIC RURAL PRESS.]

Many have been the plans for growers' co-operation in marketing fruit. Practically, all but four have failed to accomplish the purpose for which they organized. One of the four has been in operation only two years, but it has every prospect of making good. President Giffen of the California Associated Raisin Co. reports that there has been a small net increase in contracts during the past fall, as vineyards have changed hands and the new growers have come into the fold. It will be remembered, as stated in an August issue of Pacific Rural Press, that the Raisin Co. controls the marketing of the California raisin crop, which of course means the American raisin crop, by means of five-year contracts, under which the crops are to be delivered to the company at a minimum of 3 1-4 cents per pound. This price to the grower was increased on the 1913 crop, the first full crop handled because the company was able to finance the proposition.

The chief difficulty in co-operative marketing has ever been the inability to accumulate capital enough to swing the project, and keep it going profitably to the growers, whose allegiance is always essential to success.

It was in Sept., 1909, that Pacific Rural Press noted the proposition of W. R. Nutting to organize a million-dollar corporation which should offer to buy all raisins offered, at, for example, 2 cents (they were selling below that price then). This standing offer would bull the market and there would be a scramble of buyers to order, on rising prices.

For two years, this proposition lay in abeyance while Mr. Nutting awaited developments on other plans. When they failed, Mr. Nutting went to work again on his pet idea.

He saw his vision clearly—he talked it—gathered statistics, employed men who made maps showing the crops and kind of land on every fruit ranch on the 900,000 acres in the Fresno district. He made a detailed canvass of all growers and land owners.

Thousand of growers bought stock at the rate of $10 per acre of vineyards—bankers and business men backed the project financially. The Cal. Associated Raisin Co. was organized on sound business lines with capital stock largely owned by growers, and has shown two years of capability in handling the crops.

Mr. Nutting had devoted a large part of his time and much of his money for two or three years, in the successful effort to organize a cosmopolitan lot of American and foreign growers who had been disgusted by repeated dismal failures of co-operative schemes.

Now, with the Raisin Co. running smoothly, and its parent corporation, the Raisin Exchange, lying in abeyance until it may be further needed, Mr. Nutting is turning his attention to the promotion of date growing in Central Cal. His efforts are not meeting the opposition that the Raisin Co. overcame, but he reports slow progress on account of lack of finances. It is interesting to note in this connection that in the "prophet's own country" the local papers are proposing the appropriateness of the Raisin Co. or the growers putting the man who is responsible for the corporation's existence and the high prices now ruling on an "honorary pay roll." Alternative to this, it is suggested that Mr. Nutting be reimbursed for the time and money he spent in pushing the cause. As to the merits of such a proposition we know little. Neither do we know that Mr. Nutting would countenance it. But on the face of the proposition it would seem a credit to the company or community thus to recognize the father of successful raisin growers' co-operation. This would probably enable Mr. Nutting to push the commercial establishment of another agricultural industry in California on lands that now produce little of food value.

HAVE SOME GERANIUMS.

[Written for PACIFIC RURAL PRESS.]

There is scarcely any excuse for a Californian not having both climbing and bush geraniums to brighten the landscape. Anybody who has them has enough so he is glad to give away slips.

These slips are best taken a foot long, cutting off several inches of the growing tip to get woody growth. Set them in the ground 2-3 of their depth at any time of year, August preferred if water is available, January least desirable. They will climb over everything and bloom all the time.

We have geranium slips set late in November, which put out a leaf or two during the warm spells and are simply standing still now awaiting warmer weather. If they were in water-soaked ground they might rot before a chance comes for them to grow more—that is the only objection to planting in January.

While the Gravenstein is a yellow apple plentifully striped and overlaid with red, A. J. Gallaway of Healdsburg has what he calls the red Gravenstein because it is very similar to the standard variety in all respects except the color, which is nearly a solid light red over a yellow under-ground which shows through in places. It is a sport from a tree gown in Washington and if it proves as desirable in every way as its parent, the red color will probably make it very popular on the market.

A Tip on Almonds

On this continent Almonds are grown only in California. The American market alone demands *four times* the present supply.

With practically an unlimited home market and a monopoly of the product

Plant Almond Trees if you are seeking a real money-making investment. We have an extra fine lot of trees growing on Bitter Almonds, Peach, and Myrobolan Root, but as there is usually a shortage of trees on Bitter Almond, place your contract immediately—don't delay.

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The Silva-Bergtholdt Co.
P. O. Box B Newcastle, Cal.

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For Citrus Spraying

Rex Lime and Sulphur Solution

Minimizes Scale Troubles, Controls Red Spider, Destroys Fungus Growth, Tones and Vitalizes the Trees.

For Deciduous Spraying

Rex Lime and Sulphur Solution

Kills the Insects, Destroys the Eggs, Deadens the Fungus Spores. Is a Tonic Fertilizer and Vitalizer for the Trees. Is the Best General Clean-up Spray there is. Most Efficient and Used in Larger Volume for Peach Blight Year after Year.

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Rex Lime and Sulphur Solution

Sprayed on vineyards during dormant season, destroys the fungus spores and equals any spray in controlling mildew.

The Rex Companies Specialize Spray Materials and Our Chemists Devote Their Entire Time to This Work. Eighteen Years of Continuous Spray Business Means That REX SPRAYS Have the Virtue. They are the Standard.

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BENICIA, CALIFORNIA

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in each four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500%. At Maryland Ex. Station $1.96½ gave $22.11—over 1000%. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

UNITED STATES PHOSPHATE CO., Salt Lake City, Utah

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"Perfection of fineness in grinding," our motto.

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20,000 Valencias, 20,000 Washington navels, 20,000 Eureka lemons, 2,000 seedless grapefruit. All selected buds on sour stock, grown on famous Lemon Heights—Tustin. Finest lot of thrifty, clean trees in California. Must be seen to be appreciated. Write for prices, or telephone for appointment to see trees, to

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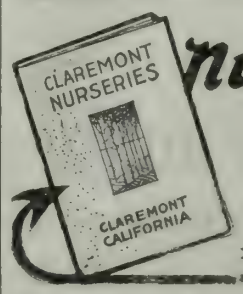
TUSTIN CALIFORNIA



Write for this Nursery Catalog

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Full line of Trees, Plants, Shrubs, Roses, etc. Very finest ornamental stock in California. Unsurpassed packing and shipping facilities. If you anticipate purchasing any kind of nursery stock, by all means write for our BEAUTIFUL FREE CATALOG. Full of fine illustrations, and information invaluable to every planter.

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1300 Indian Hill Blvd. Claremont, Calif.

Maxwell's Nurseries, Napa, Cal.

New booking orders for all varieties of nursery stock for next season's delivery.

French, Imperial, Sugar and Standard Prunes on All Roots. Apricots, Bartlett Pear, Cherry, Peach, Apple, Etc.

FIRST CLASS STOCK TRUE TO NAME.

First of the Year Flower Work.

[Extracts from "California Garden—Flowers, Shrubs, Trees and Vines," by Prof. E. J. Wickson, now in press.]

As in some parts of the State where winter temperatures are high, January is one of the greatest planting months of the year, because an early start is very desirable in preparation for later resistance to heat and drouth.

The California gardens must learn to recognize conditions and to apply principles rather than work by the almanac. There is the widest liberty in California to the gardener who proceeds by sound judgment of the mutual relations of soil, moisture, heat, and the requirements of different plants. Here also are the keenest disappointments for those who proceed on unreason or cherish the notion that a glorious climate favors horticultural license.

There are No Limits to Amateur Rose Growing.

As in some parts of the State January is the month of least activity in the garden, it should be the most active in thought and study about gardening. Nearly all good treatises on horticulture contain statements which will be suggestive for California effort if close thought on the correlation of conditions be undertaken.

In the way of specific suggestions, it may be said that, as conditions favor the activities begun last October, the same activities may be continued in January for much later effects. Where the garden is in January a mass of bloom from early fall planting, it is timely to plant the same things for bloom in spring and summer. This will include both annuals and perennials, from seed or from transplanted seedlings or roots. Even the winter flowering bulb may still be planted with bulbs kept dormant by the dealers, and the summer flowering bulbs, such as gladioli, anemones, ranunculus, etc., may be started for the early summer bloom wherever the soil is warm and not too wet. Roses are as nearly dormant as they ever become, and may be freely planted under these conditions of soil. The same is true of nearly all deciduous shrubs, trees, and roots from the nurseries. In southern California particularly, January planting is rewarded by a good establishment of transplants for thrifty growth and bloom later.

Viewing California as a whole, February is the greatest month of the year for sowing and planting. In the average California valley location and in the wide district surrounding San Francisco bay, the lengthening days bring increasing heat to the soil which is also prepared by escape of the surplus water which sometimes falls in January. The warming soil welcomes the touch of the gardening tools and brings quick activity to the seeds which are sown. The deciduous fruit trees begin to blossom, the weeds grow riotously; the gardening fever, which is a May epidemic in wintry climates, burns in the veins of the California amateur in February; and he is irresistibly impelled to sniff the fragrance of the warm moist soil and to scatter the seed; although no garden calendar for similar latitude in any other part of the continent advises him to do so.

Whenever, then, the well drained soil breaks kindly at the invitation of the spading fork, plunge it in to the cross head. Rake lightly and not too finely, for there are heavy rains to come; and a degree of coarseness in the surface is a partial escape from undue compacting. Do not clean the ground before spading, litter it rather with manure and the weeds which are cleaned from the walks. All this vegetable refuse, together with the grass and weeds growing in the space itself, should be dug deeply into the soil to increase its humus and to promote richness and friability. Then plant everything except the few things which insist on frost freedom. All the things which, on the seedsmen's packets, are marked "hardy" and half hardy are safe in Feb. in Cal., except low frosty places in the valleys, and on the mountains.

Shrub Pruning.—If the pruning of shrubs earlier in the season has been neglected, do it now. Cut out the weak old wood and shorten the growth of the previous year to good strong wood buds which will now be swelling. Such a bud on the rose will bring a shoot which will bloom in May.

Take cuttings for new rose bushes now if you have not done it already, for dormant wood will root well and blossom soon after the bush from which it was taken. Put in all common geranium cuttings—even the current growth will root readily. Multiply all common border plants like violets which grow by division of the roots.

February is a good month to do anything in the garden which has been over-looked earlier in the rainy season, and nearly everything also from which one can look forward with keen anticipation, for much of the satisfaction of coming months will depend on what is well done in February.

If you have not already planted out roses and hardy shrubs from the nurseries, do it now. Keep the spring flowering bulbs growing well with manure, and water if the rains are light. Continue planting such bulbs as gladioli, watsonia, etc., and plant seed or transplant the whole list of herbaceous perennials. Start pansies, stocks, etc., in the boxes for later planting out. Continue starting carnations from cuttings, and by all means plant out irises if it has not been undertaken earlier. Watch for plant lice on all plants, nearly, and dose them with soap sprays or insect powders. An early killing lessens later trouble.

Armstrong Nurseries
ESTABLISHED 1889

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It will assist you in making selections for beautifying your Home Grounds, Park or Avenue.

My Stock is Large and Varied.

The following are a few of the most desirable:

Deciduous Shade Trees
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Send me your "Want List" for special quotations.

Also, I will, on request, be pleased to advise with you relative to your plans for planting.

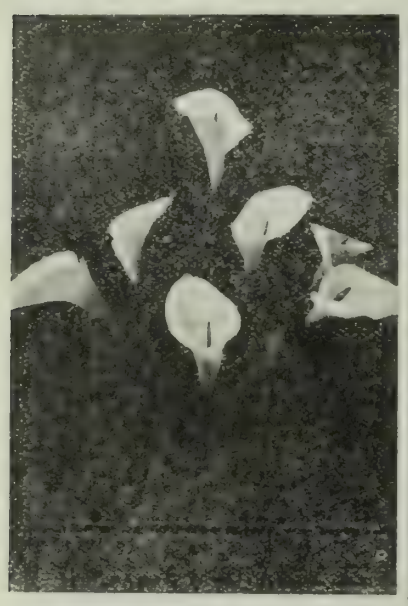
Safe deliveries guaranteed to all points in California, Arizona and New Mexico.

JOHN S. ARMSTRONG, Prop.
406 Euclid Ave., Ontario, California

CALIFORNIA BEAUTIFUL NEXT YEAR.

(Continued from page 649)

bors less fortunate? Both the fragrant Princess of Wales and the large flowered, long-stemmed California violets ought to be in everybody's yard. The former, when cut, fill the house with a delightful sense of pleasure—the others are always wanted for decoration. Violets may be transplanted any time and do not require much care, though in common with all plants, they respond to intelligent, kind treatment.



Callas Bloom Perennially.

Akin to the violet but more human, is the universal pansy, the seed of which may be sown now in a location that will remain reasonably cool and moist when springtime comes. Or they may be planted in flats and transplanted in February or March. Such a range of colors and variegations and baby expressions may be had, that we may all have different favorites.

Corn flowers or bachelors' buttons are easily induced to produce graceful cut flowers. To get early bloom, sow the seed in boxes under cover and transplant in March or April. They may be sown where they are to remain, but should later be thinned out to three or four inches apart.

The marguerites and Shasta daisies can scarcely be excelled as hedge or bed plants. While the cut flowers often make a disreputable showing because too many are crowded deep and promiscuously into a vessel, there is no danger of having the blooms too thick in the rows. The seed may prove disappointing, for they vary more or less and are a long time producing flowers. The most satisfactory way to start in Shasta daisies is to spend some extra money for roots, which should be planted not over a foot apart in order to get the massing effect.

Vines and Shrubbery.—Nearly everyone knows the riot of roses that overrun nearly every cottage in the land, the tree roses, and the bushes. From some varieties of each we of California, may pick the queen of flowers at Christmas or Independence Day; we may decorate our brides and our dead and our new born at any time of year with out-door blooms. All that is necessary to propagate the kind you like best is to cut a stick of the past season's wood (not the soft growth) a foot long and stick it in the ground

Simpler Form of Rose.

tightly, where not too much shade and moisture will cause it to mildew.

Some of us even like a change from the ever-present rose, and for such the camellia will furnish the same delights with their waxy petals and glossy leaves. They bloom profusely all winter, while the rose is in its most dormant state.

In commending to our readers the beautification of their homes and roads and yards, we feel a joy in the sense that we are contributing to the best there is in human life. We covet enjoyment of our fair land, both for the beautifiers and for the visitors, who are soon to revel in the glories of California in connection with the World's Fair, which is to open on time at San Francisco,

Pinks and Marguerites.

February 20, 1915, and the one at San Diego, which is to open January 1, 1915.

FOLLOWING DIRECTIONS.

An Irishman was somewhat under the weather and he consulted a physician. The doctor said: "Patrick you're run down a bit, that's all. What you need is animal food."

Remembering his case a few days afterward, when in that neighborhood the doctor called upon Pat in the stable.

"Well, Pat, how are you getting along on the treatment?"

"Oh, sure, sor, Oi manage all right with the grain and oats, but it is mighty hard with the chopped hay."—Exchange.

If in Doubt—Plant Prune Trees

The demand for Prunes is constantly increasing and California must supply this demand. With a cheap water rate thru to the Eastern states, giving California growers control of this market, prune trees become

Staple Money-Makers

In the export market they compete successfully with European grown varieties.

Our parent trees of French, Imperial, Sugar and Robe de Sargent have been carefully selected from trees having the best record of QUALITY, PRODUCTIVENESS AND SIZE OF FRUIT.

WRITE US FIRST

The Silva-Bergtholdt Co.
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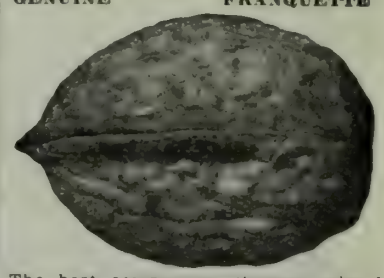
GENUINE FRANQUETTE



The best commercial Walnut; also San Jose Mayette. All trees grafted on California Black Walnut root. 6 to 10 inches above ground. Sizes from 3 to 10 feet. Prices reasonable.

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Strawberry Plants

Big bearers, all known producing varieties, only true and tried plants sold. Millions of plants, years of success, large, firm, juicy fruit; every plant guaranteed. Big yields, bear until stopped by freezing.
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Strawberry Specialist--Estab. 1880.

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Carload Lots
HORSE, COW or SHEEP
Fresh or Well Rotted.
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Kirkman Nurseries
RELIABLE TREES AND VINES

We again solicit the fruit tree and vine orders of the planters of the West, knowing that nothing but the Best will satisfy the experienced buyer. Twenty-eight years of successful nursery business has proven the quality of

KIRKMAN TREES

and the treatment Kirkman accords his customers. Our steadily growing patronage has demanded that we grow more stock each year, until we now have more than **five million** trees and vines growing in our nursery plants in California and Arizona. A considerable portion of the stock in our nurseries, which will be ready for delivery this coming winter and spring, is already sold to early customers, but we still have a complete stock of all varieties of fruit trees and vines, as well as a general assortment of **ORNAMENTAL** and **SHADE** trees, etc., etc. What are you going to plant? We have it, without doubt, in large or small quantities. Illustrated price catalog on application. Please mention what varieties you are expecting to use.

KIRKMAN NURSERIES, P. O. BOX 604, FRESNO, CALIF.

Loosening Heavy Orchard Soil.

[Written for PACIFIC RURAL PRESS.]

A heavy green cover crop, plowed under, soon disappears, as observed by C. V. Freed of Placer county, and Rudolph Wiltz of Santa Clara county, and hence they believe its value is negligible for its physical affect on this soil. Mr. Wiltz says he plowed under a green crop for 15 years on his heavy soil, part of which has a sandy subsoil far down. His problem was to open up the soil, make it more available to air and beneficial bacteria. Mr. Freed's problem was more largely to keep a good supply of humus in his decomposed granite soil.

Two solutions are worked satisfactorily by Mr. Wiltz, who has improved his soil 25 to 30 per cent since moving onto the place 26 years years ago. The improvement has come about in the past seven or eight years.

He has very seldom burned any brush. Sometimes it was piled and allowed to rot until it could be plowed under easily. His later system of disposal is to plow furrows as close to the tree rows as possible, in the same direction in which he is to plow in spring—scrape the brush into the furrows and cover it with dirt. This can be done with disk or plow and the furrows left by this operation serve a vital purpose as will be told later.

Effect on Irrigation.—All plowing and shovel cultivating is done in the general direction in which the irrigation water is to flow to make the soil take water better. The cross cultivation is all done with disks to avoid scattering the brush the first year it is in the ground. On the Wiltz ranch the slope of the land is such that the plowing may be done either direction without much difference to the irrigation. So that next year, if he desires, the land may be cross plowed, for by that time the brush has become so punky that it breaks into small pieces and does not interfere with the plowing.

The brush is used in this way, not alone for its plant food value, but perhaps even more for its value in loosening up the soil. Wherever a stick has rotted, there the water penetrates easily.

Matures His Cover Crop.—A winter cover crop is one of the main features in the improvement of Mr. Wiltz's soil. Vetch and bur clover are favorites and he likes the legumes rather than weeds or grains on account of the addition they make in nitrogen, to the fertility. But he doesn't plow it under green as most folks, but lets it mature until it has a woody fiber that when decayed will produce more and more looseness of soil than if plowed under earlier.

But how about the late spring plowing? Sometimes it gets too dry to plow before the cover crop matures. So the system wouldn't work without a chance to soak the soil by irrigation.

But to irrigate a deep heavy cover crop by flooding is impracticable and wasteful. So in the fall the furrows or ditches left after covering the brush are left unfilled and others are made by running a disk up and down the rows. The cover is sowed after the ditches are made, and the obstruction of water flow next spring by the plant growth holds the water till it soaks the soil quickly and thoroughly.

A disk is preferred for making the irrigation ditches because it leaves the soil loose and porous. A plow-made ditch slicks the bottom of the furrows so the water runs through without soaking in. So when the plow is used, a clod masher or something is dragged lengthwise over it to scrape more or less loose dirt in to act as obstruction for the water. The half-rotted sticks of brush and dried stems of cover crop also naturally act as obstruction and channels for water all through the soil. More than that they hold moisture both in themselves and in the humus that has come from them, to be available for ready redistribution as the trees use it and as the summer wind and sun draw it out from the surface.

Encourages Earthworms.—Aside from these advantages, Mr. Wiltz believes that among the farmers' best friends are angleworms, the kind that plow the soil and aerate it in proportion to their numbers. In a hard soil, or one periodically baked by the sun, these worms cannot do their work. Neither can they multiply properly, for their food is cut short. The decaying woody vegetation furnishes them food and moisture and air; it also makes possible their good work for the farmers.

ALMOND MARKET DEMAND.

[By Manager T. C. Tucker of California Almond Growers' Exchange.]

Nonpareil, IXL, Ne Plus, Drake Seedling and Languedoc are the principal varieties in demand. There is some demand for Peerless in certain markets. There is also a limited demand for Hardshells.

Each market has its own peculiarities in regard to the purchase of goods. Some prefer the IXL and Ne Plus exclusively while other markets prefer the Nonpareil, and we have markets that use principally Drake and Languedoc. We are unable to explain the reason for this condition.

The Nonpareil is the variety that is usually shelled. The plant at Sacramento is used exclusively for shelling and not hulling. Each grower is expected to do the work of hulling.

The California almond meat business is in its infancy. There are many difficulties in the way of marketing shelled almonds, such as high freight rates and competition from Europe. We are, however, gradually developing a market and look forward to big things in this line.

All varieties of almonds marketed in the shell are bleached with sulphur, the amount of sulphur applied being according to the condition of the nuts, such as thickness of shell, etc. The trade universally demands bleached nuts.

A gas turbine has been invented to eliminate the reciprocal motion of ordinary gas engines.

FERTILIZER

Put strength into the soil—put back into it what the crops take out—put it in while the soil is yet capable of utilizing nutriment—and above all put in natural animal fertilizer—the surest of all crop producers.

Write us for the booklet which tells about animal fertilizer.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS FOR CALIFORNIA SOILS

Western Meat Company
704 Townsend St., San Francisco

40-ACRE EQUIPPED FARMS

On every 40 acres we install a pumping plant, provide trees and seed adapted to the soil, and necessary farm implements to begin your work.

This establishes you at once on good land in the early fruit district of the upper Sacramento Valley, and assures you of crop returns the first year.

Everyone who wants a farm should investigate this offer.

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Alpha Combination Power Spray Outfit.

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A THOROUGHLY DEPENDABLE OUTFIT.

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ROCK HARBOR LIME FOR SPRAYING
Standard for 20 years.

Because—It slakes quickly and freely. Is free from grit and will not clog pumps. It will not precipitate when in solution. It sticks like paint when applied. Covers more surface, pound for pound, than any other lime on the market. **If not for sale by your dealer, write us.**

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Artistically Designed Lawn Garden

[Written for PACIFIC RURAL PRESS.]

Way up into December, Henry Pohlman's old fashioned two story house overlooks a most pleasing flowery lawn garden stretching a couple hundred feet toward a highway in Santa Clara county. We knew it was the Pohlman place, for over the end of the one straight walk which stretched away between flowery geraniums to a corner of the house was an artistic black board, gold-lettered to read, "12 Oaks. Henry Pohlman." It was supported from a cross-piece over the walk, resting on a walnut tree at one side and a white painted 4 x 4 on the other.

Outlines.—There are eight such walnut trees across the front of the lawn and the citrus grove of 50 or 60 young trees beside it. On the side of the lawn opposite the citrus, is a field of the majestic old oaks which may be found in so many parts of California.

It was four years ago that the Pohlman family laid out the lawn garden on a carefully conceived plan. The straight walk bounds the citrus orchard with a two or three-year geranium border four feet wide on each side, with roses, petunias, candytuft, bamboo bushes, evergreen shrubberry and earlier blooming flowers intermixed. At the side next to the oaks, a walkway curves in a general diagonal direction to the center of the front porch, in the shape of an Indian bow. This too, is bordered on the oak side with geraniums, roses, and earlier blooming flowers.

The Oak is a Strong Feature.—In the hollow of the bow-shaped walk is one of the great oaks, surrounded by a concrete circle about twelve feet in diameter. The oak's heavy body and lower limbs are beautifully draped with climbing geranium ivy still in bloom. Within the circle are bulbs which will blaze forth in beauty next spring. Around it is a walk into which turns a slightly S-shaped walk leading from the sign at the highway.

This leaves a curve-bounded triangle fronted by the walnuts along the highway, between which are more geraniums. Following the curves of this interior walk too, is a wide geranium border back of which in the fertile soil are curves of roses and other shrubbery. In the center of the triangle is a holly tree in a 10 foot circle bounded by a neat white-painted inch board, probably bent to shape by sawing into the inner side at short intervals.

All of the walks are bounded by similar white boards, which seem none the worse for their four years' service. They are held in place by stakes on the dirt side.

From the big oak, a short walk leads in gentle curves direct to the straight walk. This leaves another triangle bounded by two curves and a straight line. It is covered with bluegrass and clover, with bamboos, and oleanders in the corners and lemons and geraniums along the straight side. The bow-shaped path opens onto a walk which reaches across the front of the house, just where the steps lead down from the porch. This makes it end only a dozen feet from the end of the straight walk, and in the blunt point so formed is a riot of rose bushes. The plot between the roses and the big oak is blue grass, with a big feather-leaved palm set close to the geranium border of the straight walk so it does not shut off the view of the oak from the porch. In two corners of this plot are bamboo bushes and in one of the corners near the oak is an oleander.

Acacia.—On the other side of the bow-shaped walk and directly in front of the house is a large acacia which in spring will scent the air with its yellow flowers. Around and beyond this are such roses and flowers as fancy dictates out toward the oak grove.

Lilies and Bulbs.—In front of the porch reaching up to either side of the steps are calla lilies and others of the higher growing bulbs.

The straight walk makes a jog at the corner of the house to make room for more geraniums and white lilies along the side of the house, and for a fan-leaved palm to which a drapery of smilax clings. There is a border of light-colored foliage plants around the other side of the jog which shortly turns to right angles with the direction of the straight walk to pass by a large feather-leaved palm in another concrete circle. Beyond the circle and its palm is a great pepper tree glowing with red berries amid its graceful, hanging, much-divided leaves. The pepper, big as it is, seems to nestle under a giant oak back by the kitchen door, under which is turning space for the auto which may come by way of a drive along the far side of the lemons and oranges.

The Women Can Care for It.—It is all so simple, with its old-fashioned flowers, so easily cared for with plenty of green and plenty of color, with no harsh lines, but every border except one, a graceful curve, with magnificent old oaks for a back ground and a citrus orchard in the foreground. There is no more work to keep the place beautiful than the women could do, and they are far healthier and happier for the time they spend in the flowering lawn garden.

Too much attention is paid to putting new chemicals in the soil, according to Prof. U. P. Hedrick of N. Y. Experiment Station. Not enough attention is paid to the physical conditions of the soil which aid in making available the food elements already there.

To promote the germination of canna seeds, put them in a cup, and pour boiling water over them, allowing them to remain in the water twenty-four hours, then take them out and plant them.—Park's Floral.

One flower catalog we notice gives a table of names indicating the height of the plants, whether perennial or annual, and whether they thrive in shade, partial shade or sun.

In laying out a front yard, get the taller plants behind the others, consider blooming dates, and harmony of colors.

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How to Plant Tulips for Results.

Tulip buds that are expected to brighten the lawn in the winter and early spring must be planted in the late fall after heavy frosts or light freezes have checked vegetation. These plants are adapted to out-of-door culture in all parts of the United States, where the weather is cold enough to freeze the soil for a few weeks in winter and they should be planted about a month before the ground is liable to freeze up. In California they should be planted in the fall after the rains, without any reference to ground-freezing. Other "Holland bulbs," such as the hyacinth and narcissus, should be planted at the same time as the tulip.

The U. S. Department of Agriculture's specialist considers that tulips are most appropriately planted among shrubbery where they may be naturalized or where they may remain permanently. In general they are used to advantage in formal beds or in borders on the lawn.

The best soil for the tulip is a light loam. It should be well drained, and sand is better than clay. In clay soils it is desirable to set the bulbs on a layer of sand, to insure drainage, while in heavy soils the sand should completely surround them. They do best in a rich soil, but manure should not come in contact with the bulbs. It is best applied to a previous crop. When fertilization is necessary at the time of planting, well-rotted manure compost should be used. The soil should be put in excellent condition.

Tulips should be set four inches deep while hyacinths and narcissi should be set six inches, in all cases measuring to the bottom of the bulbs. Care should be taken to have the bulbs of any variety of a uniform size and to set them at a uniform depth, as on this depends uniformity in time of blooming.

After blooming, the naturalized plantings need no further attention except when replanting becomes necessary, which in the case of tulips would be in about three years, and of the other bulbs about five. Bedded bulbs should be left as long as possible before digging so as to ripen them. They are ready when the foliage begins to die. If necessary to dig before ripe they will deteriorate more rapidly than if well ripened. After digging, dry in the sun until the tops are well cured, take off all the leaves, store on shallow trays, where mice and rats will not trouble, till the following autumn.

GROW SOME DAHLIAS.

[Written for PACIFIC RURAL PRESS.]

The dahlia should be grown more than it is because it is one of the easiest flowers to cultivate and because it gives a wealth of bloom during the fall and summer months. Once started, however, it must not be neglected or the blooms will show the effect. To one starting to grow them it will be well to get two tubers each of three or four varieties and set them out in well-spaded soil during April and May; the later they are started the better the blooms will be in the fall. The bulbs should be planted about three inches deep and

The Adaptable Dahlia.

four feet apart, and when the stalks are about two feet high they should be well staked. Mulch heavily with well-rotted manure and soak the ground thoroughly about every ten days. Pick off the small buds that cluster around the large central one that the strength of the plant may be concentrated into the fewer and make larger flowers. Young plants may be secured from gardens and transplanted about June 1st. In the fall the bulbs should be dug up and kept in a cool dry place for next year's planting. Among the fine varieties we have tried are: J. H. Jackson, a dark mahogany, cactus variety; Minnie Burgle, scarcely crimson, and Madam Van Den Dael, soft pink, all of which are fine.

The killed tops of all vegetation may well be removed from one's flower beds after Jack Frost has visited them. This is merely for the sake of appearance, as it has nothing to do with making the garden more successful the coming season.

With bulbous plants, such as caladiums, gladiolas, tuberoses, it is desirable to remove all the soil and dry them in the open air a day or two before storing.

Many flower seed should be planted now in boxes to be ready for transplanting in spring.

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COSTS OF IRRIGATION DEVELOPMENT

[From Address by Prof. Samuel Fortier of U. S. Dept. Agr. at Washington Irrigation Institute.]

Half a century of development throughout the arid region has demonstrated that irrigated agriculture is its mainstay. The revenue now derived from the chief irrigated crops exclusive of some of the highly specialized industries and of the by-products of the irrigated farm, is probably not far from $300,000,000 a year. As such records go, this is not a bad showing when one considers that this revenue has been created out of worthless land and wasted water. From the trend of the past it is safe to predict that the prosperity of the arid States in the future will depend to a much greater degree on the products of the irrigated farm. The irrigators of the West may therefore be justly styled the standard-bearers in the march of industrial progress, since upon their efforts and those of their descendants will depend in a large measure the future greatness of the West and the welfare of its people.

The Farmer's Part.—With reference to the farmer's part in irrigation development, it may be said that every irrigation enterprise has two essential features. The first consists in the design and construction of the works necessary to provide a water supply, and the second consists in a wise use on the part of the farmer of the soil and water. In the one, consideration must be given to the location and extent of the irrigable lands, the method of acquiring patents, the adequacy and dependability of the water supply, the character of the structures required, the cost of the water supply and the best method of financing, managing, and executing an undertaking of this kind. After this first part has been accomplished, there remains the difficult task of securing the requisite number of industrious settlers having money enough to make a start under desert conditions, and when settlers are secured there follows the still more difficult task of putting the farms on a paying basis. There are feed ditches to build, sage brush to uproot, fields to plow and level, implements to purchase, fences and farm buildings to erect and no end of minor necessities to provide for. Generally speaking, the cost of the water right per acre is less than that of the improvements which the farmer is called upon to make before paying crops can be harvested. In other words, the total average cost of irrigated land, apart from the cost of colonization when it has reached the producing stage is more than double that of the water right.

To the estimated cost of the water right should be added a large percentage to cover contingencies, then to this building charge should be added the cost of colonization as well as that incurred by the farmer in putting the land on a producing basis. Thus, for example, if the estimate of the engineer on the cost of the works averages $40 per acre for the lands to be supplied, past experience shows that at least 30 per cent should be added to this cost to take care of the extras which are certain to appear. Then to this $52 per acre should be added about $20 for colonization and an additional $52 per acre to cover the farmer's part in the work of reclamation. Thus, those who promote and finance such undertakings should allow $124 per acre. It is also just as important to inquire into the how and where the prospective farmer is going to get his part of the necessary capital, and what interest he will have to pay, as it is to determine how and where capital for construction will be raised. In most instances the farmer can not issue and dispose of long-time bonds, neither can he get capital at as low a rate of interest as the promoter. Ample time should be allowed for settlement. If ten years are likely to elapse before 50 per cent of the lands are settled and reclaimed, then the first cost of the works must be increased to provide for interest and other overhead charges during this period of non-use.

Irrigation Like Manufacturing.—An irrigation enterprise is essentially a large manufacturing plant. The necessary facilities must first be provided. Then out of the raw materials of water, soil, air, sunshine, and heat the skilled artisan makes the finished product. One branch mill turns out alfalfa, a second grain, a third potatoes, and a fourth fruit. All large plants of this character, although made up of many parts, should be managed in such a way as to provide adequately for the needs and activities of all. The manufacturer who would erect a costly building and at the same time make no provision for the purchase and installation of the necessary machinery would be regarded as a fit subject for a lunatic asylum. Yet this has been a common procedure in reclamation work. Millions of dollars have been expended on structures with little or no thought as to the final outcome.

The settlers would be called upon to provide all their equipment, expend the savings of years and in general do their part without any assistance or guidance from those who built the plant. If disease destroyed their crops, if transportation companies overcharged and sidetracked their shipments and if markets became glutted, so much the worse for the producers, but the effects of these handicaps upon the undertaking as a whole seldom received the consideration their importance demanded.

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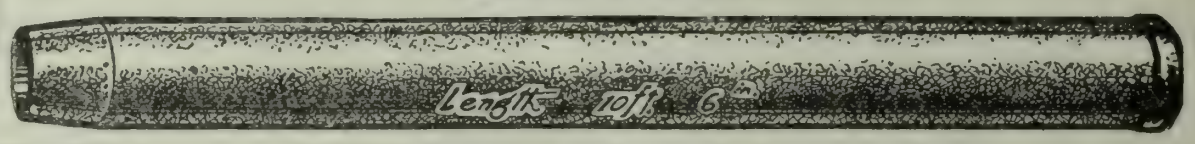

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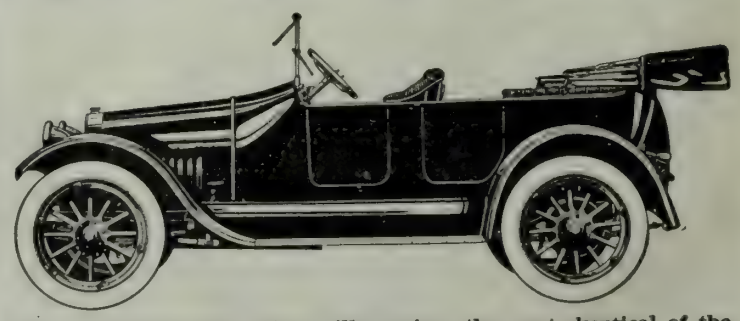

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ed to orchards. A seasonal yield of 8 tons from an acre of alfalfa land when converted into dairy products will be worth a hundred dollars and when the net profit from one chicken is $3 per year that from 300 will surely be $1000. The men who farm on paper exert their imaginations rather than their muscles, and exceptional yields are distributed broadcast over the country as if they represented the returns which any good farmer could expect.

Because one home in a community is blessed with triplets, no sane person is justified in basing an increase of population on this single case, but what seems so absurd in vital statistics becomes orthodox truth to the real estate vendor when he talks and writes on crop statistics.

It is well for Western people that they are optimistic. Were it otherwise the hardships and privations of the desert might crush their spirits, but the practice of picking out exceptional cases, and basing conclusions on these should be discarded. Because one successful orchardist in one good year under the most favorable conditions makes high profits, one has no right to conclude that other growers can do as well. These widely advertised exceptional yields, profits and valuations are undermining the very foundation of irrigated agriculture. Western people may chase the rainbow if they are so inclined, but they should not wilfully misrepresent what is so vital to their welfare.

The successful development of irrigation enterprises can best be attained by first formulating careful plans which include all the essential features. To provide only for the building of the necessary works to furnish water for a given acreage of land is almost certain to end in failure. Provision must also be made at the start, not only to settle the project, but to see that the farmer is properly equipped to do his part. Unless there can be reasonable assurance based on experience or otherwise, that land in any locality can be settled up and improved within a comparatively short time, and that farmers will be able to prosper, construction of large and costly projects should not be undertaken. Then, in the construction stage the same broad conception should be kept in mind, the chief object being to deliver water to each farmer in the proper quantity, and at the right time. Lastly, when it reaches the stage of operation and maintenance, the entire enterprise should be regarded as a simple unit and the closest kind of co-operation and correlation should be carried out between the various parts.

FRESNO FAIR IN 1915.

The success of the county fair held in Fresno this year, together with the added attendance which is expected to result from the Panama Pacific Exposition next year, have led the directors of the Fresno District Fair Association to begin preparation for a larger and better fair than ever in 1915. In the plans for entertainment next year will be included an international automobile race, a special track having been considered for this purpose. J. E. Dickinson was re-elected president of the association and C. G. Eberhart secretary.

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Grafted on native California Black root are late blooming, not frosted and practically immune to blight. See article in Pacific Rural Press of November 7th on our walnut orchard at Morgan Hill. Be sure to see samples of our nuts and investigate our trees before ordering elsewhere.
Ruehl-Wheeler Nursery
163 South Market St.,
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Trees for sale and samples of nuts also at
HALLAWELL SEED CO.,
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TREES
Grown on Sandy Loam Soil
No Spike Roots.
Almonds on Almond & Peach Root.
All Varieties of Fruit Trees for sale.
Write for Special Prices.
Land for sale in large and small tracts on small terms. We plant and care for orchards and guarantee a stand of 95%.
Plenty of water.
RIPON NURSERY and IMPROVEMENT CO.
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FRUIT TREES
"HEMET GROWN ARE BEST"
Apricots, Peaches, Pears, Apples, Olives, Walnuts, Plums, etc., etc.
Send a list of your wants and I will quote you special prices.
Julius Mayr
"TREE GROWER"
HEMET CALIFORNIA

BRENTWOOD Irrigated Farms
"BEST IN THE WEST"
IN EASTERN CONTRA COSTA COUNTY, East of Mt. Diablo. 63 Miles from San Francisco
Soil and Climate Unexcelled
Suitable for Alfalfa, Fruits, Nuts, Dairying, Poultry and Hogs
PRICE $300 AN ACRE
Including Water Right.
Write today for illustrated folder, map, etc.
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350 California St. San Francisco

Mechanical Power on the Farm.

FARM AUTO SUPPLY.

Nearly one and a half million automobiles have been sold in the United States since 1902 when the business may be said really to have begun.

The number of these machines that have gone to the scrap heap is as yet negligible for commercial reckoning. The oldest is only twelve or thirteen years old. You see the quaint old timers in service every day.

Next year, according to the forecast of the trade, nearly a half million more cars will be sold. These facts cause many to wonder where these hundreds of thousands of cars will go next year—and the years after that. They figure that there is now one automobile to each seventy or eighty people in the country. How many possible purchasers remain to be supplied?

Without taking into account the scrapping of old machines, which must be replaced with new ones, it may be said that stupendous as the busines is, the possibilities have not been much more than "scratched."

Farmers' Autos.—Not quite 50 per cent of the automobiles in use now are owned by farmers. But there are in the United States, according to the census of 1910, six million three hundred and sixty-one thousand, five hundred and two farms, with a total value of forty billion nine hundred and ninety million, four hundred and forty-nine thousand, and ninety dollars—an average value per farm of six thousand four hundred and forty-four dollars.

A supply averaging one automobile to a farm is a long way in the future—but the demand is not inconceivable. Some day, without doubt, it will be approximated—and when it comes it will represent a degree of progress and efficiency as far ahead of the present as the supply of that day will be ahead of the present supply.

Thus far the number of automobiles owned by farmers is only about 10 per cent of the total number of farms. The manufacturers would have to produce over five million more cars to fill the farm market alone.

Autos Educational.—The coming of the automobile has made remarkable changes in farm conditions. It is carrying the farmer far and wide over the countryside and bringing him into close touch with all the great improvements in agriculture.

Today it is no uncommon thing in any of the middle western states to see anywhere from 50 to 300 automobiles grouped about a field where a plowing contest is going on, or standing about the stable where there is a sale of fine cattle. These automobiles come from distances of 10, 20 and even 30 miles. They bring the farmer to these centers of interest quickly and without a great waste of time.

Pleasure and Utility.—The automobile on the farm is a paying investment in many ways. On many farms the car does service both as a pleasure car and a truck. By removing the body the car is converted into a truck on which farm products are quickly taken to market at little expense.

Boys on the Farm.—When it comes to the boys on the farm, no one can doubt the influence of the automobile in making the farm attractive. Both the boys and girls of the farm drive the car and take care of it, and you may be sure that the young men or women on the farm where there is an automobile see to it that the car is kept in good shape. There is a marked decrease in the desire on the part of the young to get away from the farm, and the automobile is one of the most important influences to bring about this change.

Good Roads.—The automobile has promoted the good roads movement all through America. This is decreasing the cost of transporting agricultural products to market. And so important an item is this that it could almost be said that the improvements in roads alone would more than pay a big interest on the amount the farmer has invested in automobiles.

These are causes of the growing business of the local automobile dealer—for on the local dealer the farmer depends for his cars. It accounts for the fact that from now right on through the winter months the factories will be busy turning out cars to meet the spring demand. The high point of production is reached about the middle of February. The local dealer buys cars in advance and stores them until the opening of the spring season so he can make prompt deliveries when the rush comes.

BOTH TRACTORS AND HORSES.

[Written for PACIFIC RURAL PRESS]

"On a single day . . . . we read of five steamers . . . . carrying in all 5,320 horses for the European armies. If this should keep up as a daily rate, ... it would be harder to make this country's crops with hoes or tractors."

G. M. Walker of the Holt Mfg. Co. objects to the above editorial in Pacific Rural Press of Dec. 5, claiming "the editorial holds this up as a most deplorable possibility"; and suggesting that "Instead of looking upon the European war demand for horses as a catastrophe, therefore, let us recognize it as an opportunity—an opportunity to sell our horses at higher prices, to buy tractors, to install modern methods on our farms."

We differ from Mr. Walker in that the statement in question was not held up as "a deplorable possibility," but as a simple statement of fact. This fact was used as a text to point out a kind of opportunity which the horseless one fails to recognize, viz: "there seems to be more reason than ever to take up the horse as a specialty in production." We still maintain that there are farms where horses are of greater absolute economy than the tractors now made can ever be. This does not minimize the value of tractors in their place. And it does recognize that the "place" for tractors is constantly enlarging as improvements are made and conditions readjusted to that source of power. This is illustrated in Mr. Walker's statement that, "Five years ago, the U. S. Department of Agriculture collected figures that showed the cost of plowing with tractors was $1.41 per acre. Since then, tractors have been greatly improved in durability, cutting down the depreciation charge materially, and their capacity has been increased. A fair summary of daily costs prepared at the present time would show an average cost of about 82 cents, for the tractor."

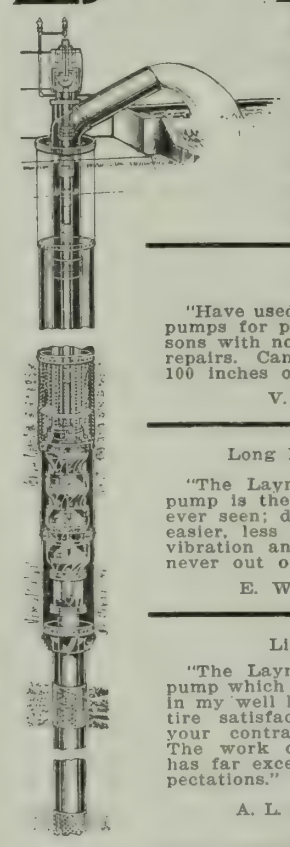
Of course tractors are available for many uses besides plowing, otherwise their usefulness would be forever limited. And about as Mr. Walker says, their use on the smaller farms is on the increase. Still, we are far from ready to adopt his suggestion to "do without horses." or to sell them for war and buy tractors indiscriminately.

He says: "Possibly some farmers look upon the tractor as a big farm proposition. It was that in the early days, for the demand from the big farms was most insistent. But today, as one will find from glancing through the advertising pages of

WHAT A FEW OWNERS SAY

About the

LAYNE & BOWLER PUMP



We give below several extracts from letters received from users of the Layne & Bowler Pump. We have hundreds of such letters on file. Send today for our Catalog No. 25. It tells how you can produce the cheapest water and gives valuable irrigation data.

Chino, Cal

"Have used one of your pumps for past two seasons with no expense for repairs. Can easily pump 100 inches of water"

V. E. WIRE.

Long Beach, Cal.

"The Layne & Bowler pump is the best I have ever seen; does its work easier, less friction, less vibration and noise, and never out of balance."

E. W. SPEARS.

Lindsay, Cal.

"The Layne & Bowler pump which you installed in my well has given entire satisfaction as per your contract with me. The work of the pump has far exceeded my expectations."

A. L. LAIDLAW

Elsinore, Cal.

"My Layne & Bowler pump has run through the season and has done perfect work I do not hesitate to tell everyone it is the best pump on the market"

F. C. LILLIE.

Los Angeles, Cal.

"With the Layne & Bowler pump we are pumping about 40 inches more than we expected to get. I consider it the best pump for irrigation."

PERCY H. CLARK.

Van Nuys, Cal.

"I have always been a booster for your pump and it has given me all the water the well will supply at a depth of 118 feet. What more can a pump do?"

S. O. HOUGHTON, JR.

Layne & Bowler Corporation

900-910 Santa Fe Ave., Los Angeles, California.

"Jackson MADE"

Write for Catalog No. 47K

A "Jackson Made" pump raises more water at less cost per gallon than any other pump and by its freedom from costly repairs actually pays back its first cost in a very few months.

This is no figure of speech—it is demonstrated every day by our pumps actually at work.

No matter what your pumping needs may be—there is a "Jackson Made" pump ready to work for you at a lower cost than any other make.

Our expert engineers are gladly placed at your disposal for free consultation.

A Better Make Not Made

Byron-Jackson Iron Works, Inc.

357-361 Market St., San Francisco, Cal.
212 N. Los Angeles St., Los Angeles, Cal.
WORKS: WEST BERKELEY, CAL.

any farm paper, there are tractors for farms of every size; tractors for orchards and for vineyards, tractors that do the work of as few as eight horses."

TRACTORS FOR TIMELY PLOWING

[Written for PACIFIC RURAL PRESS]

"There are just 15 minutes when you can plow dobe soil," says a southern farmer. A Sonoma county rancher, W. B. Depew, realized this as a rather extravagant claim with a solid foundation. In the fall before setting out his 40 acres of prunes on soil of quite adobe nature three years ago, he watched its condition, and just when it had moistened with the fall rains three or four inches deep, he hired five teams to rush the plowing.

But what if the five teams or any part of them had been temporarily unavailable till enough more rain had come to stick the plows? On dobe soil especially, or anywhere that much work must be done quickly, an eight to sixty horsepower tractor has an advantage in that it can be run without delay, onto the field; and under careful driving kept almost continuously at work day and night while the conditions are right for the job. And there is no need for any let-up for rain until the plow balls up. The hot summer sun likewise has little effect on a tractor except to make it crave a cool drink more often. We happened to see a Yuba tractor last August in Fresno county that had run steadily all day until late in the afternoon, stopping only once, and that for water. That is going some when you consider the warmth of the sunshine that makes the Fresno raisins famous.

The Cotati Ranch of Sonoma county realizes the need of mechanical plowing on their big hay and grain ranch. Among their tractors is one of 60 horse-power, run by steam. For fall seeding, they plow early in the fall. It is necessary to harrow at once to avoid baking and to prepare the ground for seed. This operation costs nothing much since the harrow is hitched on behind the plow. If it doesn't work the ground fine enough, a big disk, heavily weighted, cuts it up and is followed by a harrow attached behind.

G. A. Roberts, also of Sonoma county, gives us the following figures on a Case engine which plows dobe for Buzzini Bros. It is a 50 horse-power engine and, burning about 35 gallons of distillate per 12-hour day, plows six furrows totaling six feet wide. This "doesn't use half the power," so that for fall seeding of grain, it would easily pull a 12-foot harrow attached behind the plows; thus harrowing the the land twice without any extra men or engine and without compacting the plowed soil by later separate harrowing.

PREHEATING DISTILLATE.

Owing to the difficulty met in vaporizing and carbureting some of the common fuels used in internal combustion motors, heating of the carbureter or vaporizer is resorted to. Gasoline is quite readily vaporized at all ordinary temperatures; kerosene, however, does not vaporize readily at ordinary atmospheric temperatures and the crude oils require high temperature to form vapors that will burn properly in the engine. The crude oils are usually injected into the engine cylinder or into a jug-shaped vaporizer connected direct to the cylinder. This vaporized liquid must be heated externally before starting the engine, but thereafter derives its heat from the engine.

When the charge is heated before entering the engine cylinder, as is usual with kerosene and some other distillates, the charge is expanded and consequently the weight of the charge entering the cylinder is less than though it were cool. As a result the compression of the warm charge will develop a higher temperature with very little if any increase in pressure over the engine having a low temperature feed. Consequently the expansion and resulting pressure after ignition will be reduced by the preheating, and the power of the engine reduced proportionately. Also the higher compression temperature due to preheating makes pre-ignition likely. The power of an engine may be reduced considerably by preheating the charge, though the actual efficiency of the engine is not lowered and may possibly be increased. A. CAMMACK.

Col. Agr. College.

Feed the calves regular amounts of milk and much of the scouring troubles will have been overcome.

Save Labor on Your Farm This Winter

For less than half the cost of keeping an extra hand you can have your cows milked, your cream separated, and practically all your chores done by a

G-E ELECTRIC MOTOR FOR RANCH AND FARM

G-E motors will also drive irrigation or house pumps, circular saws, wood splitters, ensilage and feed cutters, corn shellers and many other farm machines besides household labor saving devices such as washing machines, food choppers, dish washers and the like.

A G-E motor is easy to operate, does not get out of order, and costs but a trifle to run. A G-E motor pays for itself many times over through savings in time, labor and wages.

"Let G-E Motors do your work"

General Electric Company

Los Angeles Office:
124 West 4th Street
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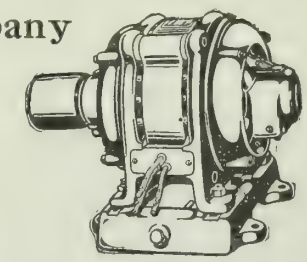
The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

Address nearest office. 4963



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The Commercial Engine

Highest efficiency at lowest cost.
A size for every need.

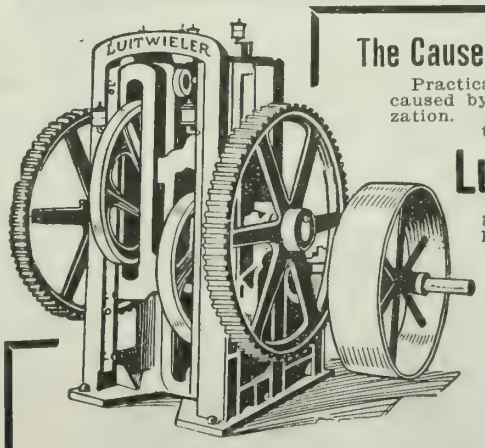
Valuable Catalog
containing useful water tables Free. Send for it.
Some of our users say:
"Shows a very high efficiency."
"Think Commercial best on market."
"Giving us perfect satisfaction."
Before you buy find out about
"The Engine of No Regrets."
Send for catalog 18-R.

Commercial Engine Co.
2416 PORTER ST., Los Angeles
Branch, 1228 "H" St., Fresno.

200,000 FEET CHEAP WATER PIPE

Just received several car loads of new and 2nd hand Water Pipe, Oil Well and Water Casing. In ½, ¾, 1, 1¼, 1½, 2, 3 inch and many other sizes. O. D. Casing 2, 3, 3½, 4 in. Riveted and surface irrigation pipe. Big Stock. Prompt shipments. Lowest price. Write, phone or wire.

ADAMS PIPE WORKS.
2030 Bay Street,
Los Angeles, Cal.
Phones Brdy. 1264—F1917
(Under entirely new mngmt.)



The Cause of Most Pump Troubles

Practically all pump troubles are caused by jar, vibration and crystallization. The absence of pumping troubles in

Luitwieler Pumps

goes to prove that they are perfectly designed. The cam, with self-adjusting changing radius, regulates the operation of the plungers. An absolutely even application is maintained. Positively no jar or vibration. No excessive friction. Less power needed. Cheapest water produced.

Send for Catalog No. 12 today.

Luitwieler Pumping Engine Co.
707-713 N. MAIN ST., LOS ANGELES, CAL.
San Francisco Agents:
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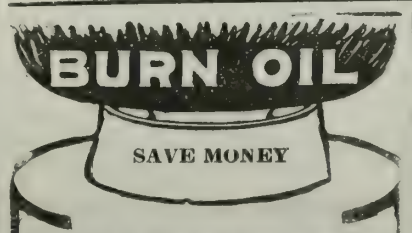
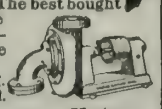


Star Oil Gas Burner burns cheap engine distillate without smoke or dirt. Heat as intense as city gas—for cook stove or furnace. Cheaper than wood, coal or gas. Agents wanted. Sell burners to your friends and neighbors. All want them. Sold with our iron clad guarantee.

STAR OIL GAS BURNER CO.,
Pasadena, Cal.

PLANT ECONOMY=DOLLARS

You Can't Save Money When You Throw It Away on poor equipment. The best costs less in the end. The best bought of us costs no more than the inferior of others. Thats the way we do business. Just write for our catalog. It will prove our statement.



Engines - Pumps - Motors

ENGINES

A dollar well spent is a dollar made. Be careful before buying.

Norman B. Miller Co. San Francisco, Cal.
503 MARKET STREET

Agricultural Review

DECIDUOUS FRUITS.

Fruit packers of Fresno have succeeded in their plan to have the 3,000 delegates to the Western Fruit Jobbers' association's convention visit Fresno while in this State during February.

A notable increase in almond planting is said to have taken place in the vicinity of Paso Robles during the past couple of years and plans are being laid by several land owners to plant further orchards this year.

An association to be known as the Placerville Fruit Growers' association was organized at Placerville last week. This will insure a new packing house for that place. The new organization will be affiliated with the California Fruit Exchange.

The last carload of Tuloumne county apples arrived in Stockton last week. It has been estimated that 10,000 boxes were sold from that county this year, all of which were of exceptionally fine quality and size, owing to the careful methods employed by growers in packing and sorting.

In order to arrange with eastern jobbers for the sale of next years' crop of walnuts and also aid in starting the widespread advertising campaign which is to be carried on by the California Walnut Growers' association, Carlyle Thorpe, manager of the association has just left for the eastern States.

The Los Molinas Canning and Shipping company have just completed the new building erected by that association. Plans are being laid to operate ona larger scale next year and an effort will be made to get larger acreages of all kinds of vegetables planted in order that carload lots may be handled. The association handled about $11,000 worth of farm products this year.

A movement is being put on foot in the Watsonville district to have the State legislature pass a stringent apple packing law which will prevent the further packing of inferior fruit. A number of the more prominent growers and packers have signified their intention to support the bill as they believe it would overcome many of the obstacles encountered in past years in marketing apples of good quality.

The success of the co-operative cannery owned by the Tulare County Growers' association has led leading growers in the Kingsburg district to take up the formation of a similar association with a view of of erecting a cannery at that place. Suggestions are being made that by increasing the number of these canneries a co-operative selling agency could be maintained and in this way the growers get all of the profits accruing from growing and selling of the fruit.

Recent deveolpments in experiments carried on by the department of agricultural in Sutter county indicate that fruit trees may be grown in many alkali soils of this State not heretofore thought possible. Their experiments were carried on with two trees, the Anaygdalus davidiana, a Chinese seedling peach and the prunus pseudo cerasus, a Chinese seedling cherry tree. Planted in arid alkali spots where it has been impossible to grow other kinds of fruit trees, the trees are said to have borne good crops of cherries and peaches the past year.

CITRUS AND SEMI-TROPICAL.

A report from Oroville says J. A. Lawrence of that place has an 18 month old olive tree which is loaded with ripe olives.

W. Windsor is authority for the statement that olives will play an important part in the future in the section adjacent to Hemet. He recommends the planting of Mission and Manzanillos in that section.

A carload of the best oranges grown in Tulare county this year have been shipped with other Tulare county products to the Panama-California Exposition at San Diego, to be used at that place to advertise Tulare county.

Heavy frosts and also heavy smudging are reported from many southern California points during the recent cold spell that was general over that part of the State. According to latest advices from that section of the State however, no damage has been reported.

The latest addition to the citrus industry in Riverside county is the erection of machinery and the starting of a plant for the manufacture of citrus by-products. The plant has a capacity of handling 4,000 pounds of cull oranges daily and of turning out 2,000 pints of orange syrup.

A new olive product which is being turned out by the Tulare County Growers' Association at their cannery in Porterville is minced olives. Olives which are bruised in handling and are not fit for pickling are chopped up, put in cans and cooked in their own oil. They are said to be especially adaptable for salads, sandwiches etc.

A "buy a box of oranges" movement which has been started by the Housewive's League of New York City has met the hearty support of orange growers in the southern part of the State. The movement has been started by the eastern women in view of the fact that they can buy oranges cheaper by the box than by the dozen and thus save money.

Owing to the fact that James Hansen of Milpitas, Santa Clara county has successfully grown lemons in that county for many years and found them profitable on a small scale, he has decided to plant a 10 acre grove this year. He states that lemons can be grown as profitably there as elsewhere in the State, especially above the frost belt of the valley.

Reports from Tulare and Butte counties are to the effect that shipments of navel oranges are nearing the end for this season. It was estimated last week that 1600 carloads had been shipped from Lindsay at that time with a possible 600 boxes still on the trees. Packers in Butte county do not expect the crop there to come up to the 600 car estimate made earlier in the season.

GRAPES AND RAISINS.

According to statistics recently compiled by E. M. Shehan of the State Board of Agricultural Commissioners between 150,000 and 200,000 crates of grapes have been packed in sawdust this year in this

Classified Advertisements

Rates 3c per word. No order for less than 25c per week. If you have anything to sell, or want anything, use these columns.

LAND FOR SALE.

FOR SALE—Two 160-acre Sacramento Valley alfalfa and hog ranches, 1½ miles apart, 7 miles from large town located on 3 railroads. Extra well equipped with buildings, fencing, etc. 75 acres in alfalfa. Free canal water. Will exchange one or both for olive, nut or fruit ranch or ranches, or sell on easy terms. Am not a hog man. Write owner. F. L. Darrow, 1605 Telegraph Ave., Oakland, Cal.

A BARGAIN—110 acres land in Watsonville district. Will raise corn, beans, potatoes, hay. Also apples and apricots. Springs on land. No irrigation required. Fine climate. Six miles to railroads. Price, $35.00 per acre. $1500 cash, balance, terms. A. H. Knox, Palo Alto, Calif.

160-ACRE MOUNTAIN RANCH, Tulare county, near Mt. Whitney. Power plant, mail service, school, plenty of water could be developed; enough oak wood to more than pay for place. $1600 cash. Mrs. C. Clayton, Visalia.

200 ACRES FOR SALE, eight miles west of Lodi, joining Brack Station, 40 acres ten-year Tokay; 90 acres wine grapes, 7 and 10 years old; balance hay and pasture. $225 per acre. Terms. T. H. Beckman, Lodi.

TO LEASE FOR 5 YEARS—Alfalfa land, 27 acres, under Oakdale irrigation ditch. New house, barn and well. Apply F. R. Grosscup, 1278 Market St., Room 202, San Francisco.

$8000 IN BEAUTIFUL SARATOGA foothills. Prune ranch, improved property. Woman going East will exchange part value for good bare land. R. F. D., 33, Saratoga.

C. M. WOOSTER CO., 25-year experts in land and mortgages; investors will save money and avoid errors by consulting them; land in all counties. 303 Phelan Bldg. San Francisco.

FOR RENT—300 acres of alfalfa land on Dixon Ridge abundance of water for irrigation. Apply, J. H. Glide, Dixon, Cal.

MISCELLANEOUS.

I HAVE ENLARGED my capacity to 65,000 egg room and can accommodate my customers better than ever with white and brown Leghorn chicks; also Barred Rocks and Rhode Island Reds. Indian Runner Ducks. Santa Clara Valley Hatchery, San Jose, Cal., R. R. 6, Box 336 C. Phone S. J. 1889.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHECTER PIPE WORKS, 304-8 Howard St., San Francisco.

FETERITA CORN — The coming hog-feed yields 32 to 25 sacks per acre. Write for sample and prices. The corn that puts the Du in Duroc-Jersey. Jno. P. Daggs, Modesto.

"SMITHS' PAY THE FREIGHT."—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITHS' CASH STORE, 106 Clay St., San Francisco.

BUY YOUR APPLES direct from grower. Bellflowers, Newtowns, Langford Seedlings, Missouri Pippins. Prices on request. Edward A. Hall, Watsonville, Cal.

FOR SALE—Russian Wolfhound pups, sired by prize-winning imported wolfhound. Will rid place of coyotes, jackrabbits, etc. E. F. Behrens, Lindsay, Cal.

FOR SALE—Baled Alfalfa Hay in carload lots. Write for prices. V. L. Wiser, Gridley, Cal., R. F. D., No. 1.

FOR SALE—Russian Wolf-hound. 1 year old. Male, $20. Female, $15. A. R. Moore, R. D. No. 2, Pomona, Calif.

AGRICULTURAL HYDRATED LIME—Sheep and chicken manures. H. B. Matthews, 733 Merchants' Exchange Bldg., San Francisco.

BELGIAN HARES.

THOROUGHBRED Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 3, San Francisco.

TREES AND NURSERY STOCK.

PEACH SEEDLINGS, twenty thousands, all sizes and prices. Must be ordered before the 20th of Jan., 1915, pay on delivery. One thousand pounds of Pollock strain of Rocky Ford Cantaloup seed. If you want profits, try it. A few of Burbank's latest creations, Beauty and Formosa plums. Standard prune trees and scions for grafting. Grafted Walnuts and ten thousand black walnuts. All guaranteed to be as good as any at any price. A. P. Henning, Clements, Cal.

GRAFTED WALNUT AND PAPER-SHELL PECANS.—Exclusive propagators of Tribble Mayette, Kerr Parisienne, and Improved Franquette. All walnut grafts taken from our bearing trees. Finest trees in the State. Eureka, Wiltz, San Jose Mayette, Concord and other varieties. Bartlett Pear on Blight Proof Root. Olives, fruit trees, etc. Reduced prices. New list ready. Tribble Nurseries, Elk Grove, Cal.

GRAFTED FRANQUETTE WALNUTS—Our nuts bring $100 more per ton than the best Santa Barbara seedlings, and our Royal root grows 50 per cent faster than the average California root. It took us ten years to develop this combination. It is at your immediate disposal. Write us for number you need. Catalogue and price on application. Imperial Walnut Nurseries, R. D. 7, San Jose, Cal.

IT WILL PAY you to let me figure with you on large or small plantings of Apples, Pears, Apricots, Prunes, Peaches, Strawberries, Logans, Blacks, Currants, Gooseberries, etc. Send list of requirements. To secure mailing lists, 12 deciduous fruit trees for $2.50—your selection. 100 Strawberries for $1.00. All prepaid. H. A. Hyde, Nurseryman, Watsonville, Cal.

MISSION OLIVE TREES—Will be two years old next March. To be absolutely sure of getting Missions, I only propagate from my own trees, raised thirty years ago. Also cuttings from same trees for sale. W. A. Hayne, Box 461, Marysville.

BURBANK'S SPINELESS CACTUS—100,000 leaves of the new improved varieties, direct from the home of the originator. These new varieties are 100 per cent better than the old. Order now for spring delivery. Send for catalogue and price list. J. I. Jewell, Santa Rosa, Cal.

BURBANK'S THORNLESS BLACKBERRY—a very limited supply of this new wonderful plant, a new creation, fast grower and heavy producer of fine berries, for sale at $1.50 each, or $1.00 each for 5 or more. J. I. Jewell, Santa Rosa, Cal.

CALIFORNIA GROWN Sudan Grass Seed. I have a limited amount of this seed. Until sold, will fill orders less than ten pounds for $1.00 per pound; over 10 lbs, 90c per pound. Delivered. D. W. Parker, Roseville, Cal.

PLANT RUSSIAN RIVER non-irrigated trees. More hardy. Better root system. Self-reliant; didn't have to be weaned. Got the go—you get results. Price list, all kinds, mailed on application. Miller & Gobbi, Healdsburg, Calif.

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FOR SALE—Several hundred choice Eureka Walnut trees on Northern black root. Sizes from four to ten. Prices reasonable. James F. Gooch, Riviera, Cal.

FAMOUS ST. REGIS EVER-BEARING Red Raspberries, Strawberries, Blackberries. Postage paid. Old Hickory Supply Co., Dept. 3, Capitola.

BEFORE YOU PLANT OLIVES, cactus, or rhubarb, send for my free booklet. Bishop's Nursery, Highland, Cal.

MUIR AND ELBERTA PEACH trees. $5 per hundred. N. M. Cunningham, Red Bluff, Cal.

BERRY PLANTS, Rhubarb, Cacti.—Send today for price list. Louis F. Scribner, R. 2, Pasadena, Cal.

QUALITY TREES—Burbank Cactus. Cash Nurseries, Sebastopol, Cal.

WALNUTS—Supply of Chase trees limited; write for descriptive circular. Magnolia Nursery, Whittier.

50,000 STRAWBERRY PLANTS—"Dollar" variety, $2.50 per thousand. F. B. Dyar, Loomis, Cal.

WANTED.

WANTED—Single man with office experience for large ranch, one with some knowledge of general farming operations preferred. Answer in own handwriting, stating age, experience and references; also salary received heretofore. Box J, this office.

WANTED SINGLE MAN, experienced in dairying, to assist in milking 50 cows with machine, and work on ranch balance of time. R. S. Burrough, Cloverdale, Cal.

DAIRYMAN with many years' experience, wishes to run dairy on shares. Alfalfa preferred. Best references. Box 74, Pacific Rural Press.

ACTIVE JAPANESE,—Agricultural College graduate, seeks opportunity to work on seed ranch, nursery, or orchard. Ishida, 1760 Post St., San Francisco.

PARTNER WANTED for fruit and poultry ranch. Have income place with suitable buildings. R. 1, Box 248, Petaluma, Calif.

EXPERIENCED ORCHARDIST wishes place as foreman or superintendent. Also familiar with general farming and dairying. Address, Box 4, this office.

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WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., S n Francisco.

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CALIFORNIA STUMP PULLER COMPANY
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State. The price f. o. b. California has averaged about $2.25 a crate and as the expense is only about 86 cents the grower receives about $1.40 a crate as compared to 40 or 50 cents or less during the regular shipping season.

Figures just received show that 44,467 tons of raisins have been shipped by the Associated Raisin company during October and November, which is about 40 percent of this year's crop. Last year to this date only 32,950 tons had been shipped. As the movement of raisins to the East this month has been exceptionl a-ly heavy, it is estimated that 50 percent of the crop will have been marketed by the first of the year.

FIELD VEGETABLES.

Bean growers in the Coleta district of Santa Barbara county have harvested about $154,000 worth of lima beans this year. Word just received indicates that growers there are expecting to increase the acreage of this crop next season.

What is said to be the only cannery in the State successfully canning green lima beans is the one belonging to the Calima Canning company, near Sawtelle. This plant has been operated two years as an experiment and the results have been so satisfactory that it seems probable more plants of the kind will be built in the future.

Tomato culture promises to be quite an industry in the vicinity of Selma, Fresno county, due to the satisfactory returns which were secured from experimental plantings this season. R. Wood who was one of the most extensive growers last year cleared about $80 an acre from his tomatoes besides raising a crop of hay earlier from the same land.

County horticultural commissioner J. E. Hassler of El Dorado county is advising potato growers in that county concerning the possibilities of selling seed potatoes. Instead of selling their product at market prices he believes it would be possible to get almost twice as much for them as seed. It is necessary that they be free from eel worms and tuber moth.

A reduction in water srate on beans went into effect this month, the charge being reduced from $7 to $6 from California to New York. Previous to the opening of the canal the water rate was $10 a ton. The rate by rail at the present time is $18 a ton but it is reported that several railroad lines are endeavoring to get the Interstate Commission's permission to allow reduction in this rate.

Another investigation or rather a fuller investigation of the Lima Bean Growers' association is being planned by the Federal government, according to late reports. According to president Donlon of the associa-

A most attractive, interesting and tion the investigation will be of little goood as the association is about dead anyway. The reason for this renewal of the affair was the increase in prices which were put into effect by the association immediately after the declaring of war in Europe.

instructive "Potato Study" poster has just been issued by the Agricultural Department of the Denver & Rio Grande railroad. At the top of the poster the eye rests on a large plate of potatoes, clean, healthy and life size. Below these are illustrations of potatoes afflicted with those diseases which cause the greatest amount of trouble in potato fields of the United States today, namely: Common Scab, Fusarium Wilt and Rhizoctonia, accompanied by a description of the disease carefully written in simple language without the use of technical terms. Farmers can readily understand these descriptions, and by the aid of the very clear pictures, determine whether the potatoes they are saving for seed have any of these troubles.

County agriculturists, bankers and station agents are co-operating with the Rio Grande commissioner of agriculture in his endeavor to get this "Potato Study" poster into every farm home in the potato growing districts served by this system. This work is calculated to do a permanent and positive good in the potato territory of the Rocky Mountain region and may be had by addressing the Denver and Rio Grande, at their Denver Colorado office.

The fundamental truth. Rotation of crops is the surest plan to cleanse the soil of all crop disease germs, is prominently displayed in the poster. Eight methods of control are given, as well as the details of the corrosive sublimate treatment for seed potatoes, which is believed to be the most thorough and effective remedy.

GRAIN AND OTHER CROPS.

A report from Butte county is to the effect that rice buyers are showing some resitancy in buying this year's crop, probably due to the general shortage of money. It is believed however, that after the first of the year the situation will become easier.

Present indications are that the acreage seeded to wheat in the Sacramento valley this year will be the largest for 25 years. Many thousand acres that have not been farmed to any crop for several years will be planted. The causes of the extra planting are the high prices prevailing this year and the belief that the European war will create an enormous market for next year's crop.

Several hundred bales of hops have been sold recently at Ukiah for prices ranging from 7 1-2 cents to 8 1-4 cents a pound. This is the lowest price recorded in years and many growers claim it is unwarranted in view of market conditions at this time. It is hoped that the new growers' association of the Pacific coast will overcome such unfavorable prices.

Grain growers in Kings county are being advised to take precautions against smut by dipping seed grain into a solution of 40 gallons of water into which has been mixed one pint of formalin. This amount will treat 50 bushels of grain, which should be soaked in the solution 10 minutes before draining. The trouble with dipping sacked grain is that not all of the surface of each kernel is soaked.

At a meeting recently held at Manteca, 350 acres of land were signed up by the Spreckels Sugar company for planting next year, to sugar beets. It is estimated that fully 2,000 acres will be planted to beets in that section next year as both soil and climate favor the beet there.

Several farmers in the vicinity of Orange Cove, Tulare county, are planning to experiment the coming year with sugar cane. A representative of the Visalia sugar factory visited them last week and pronounced the land adaptable to cane but not to sugar beets.

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TREES
Write for Price List
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AND DITCHER
Breaks Up Hardpan and Plowpan
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it makes ready the soil as nothing else can. Cuts down deep and fairly pulverizes subsoil. When Knapp's Subsoiler has been used before planting alfalfa, you can get better results by irrigating once in 60 days than once a week where the hardpan has not been broken up.
IN SETTING FRUIT TREES—this implement makes digging the holes the easiest of tasks. Where trees are all ready planted it breaks up the plow-pan and allows the moisture to get down to the roots. Breaks a strip of ground from 3 to 4 feet wide.
BUILT SOLID AND STRONG—guaranteed for a 25 H. P. pull—and has been used behind a 35 H. P. machine.
GUARANTEED BY KNAPP—and that means a lot. Knapp's plows are known all over the Pacific Coast, wherever good plows are used.
DITCHER ATTACHMENT—with this attachment you can ditch as you sub-soil, making a ditch 2 feet deep and 4 feet wide.
WRITE FOR MORE PARTICULARS—ask us anything you want to know about the subsoiler and ditcher—and for names of those who are using it.
H. G. Knapp & Son, 1022 S. First Street SAN JOSE, CAL.

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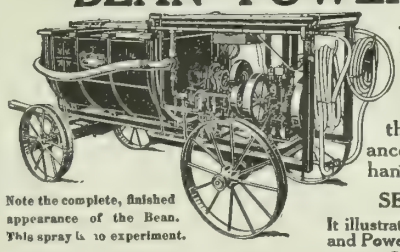
—drive the material on at high pressure and have non-rusting ball valves, porcelain-lined cylinders, Bean patented pressure regulators and many other distinctive advantages. On account of their low-down, compact, perfectly balanced construction they are as easily handled on hilly ground as on the level.
Note the complete, finished appearance of the Bean. This spray is no experiment.
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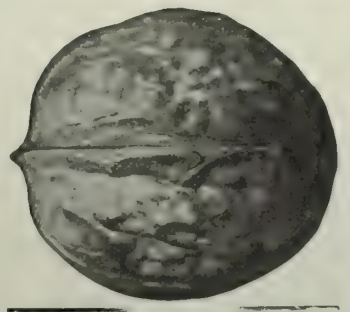
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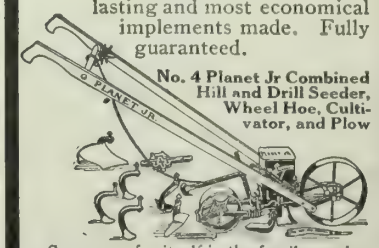
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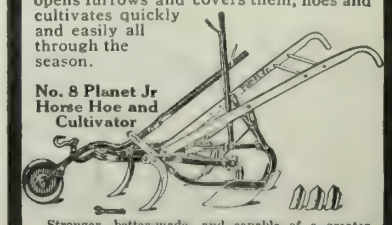
Soon pays for itself in the family garden as well as in the larger acreage. Sows all garden seeds (in drills or in hills), plows, opens furrows and covers them, hoes and cultivates quickly and easily all through the season.

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Stronger, better-made, and capable of a greater variety of work than any other cultivator made. Non-clogging steel wheel. Depth regulator and extra-long frame make it run steady. Adjustable for both depth and width.
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Describes 55 tools including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard-and Beet-Cultivators.
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A Hillside Silo and Stock Farm.

[Written for PACIFIC RURAL PRESS.]

While on a trip some two years ago through Amador, Calaveras and Tuolumne counties, the writer was impressed with the interest that was being taken along agricultural lines and those impressions were as nearly as possible set forth in these columns at that time.

For fear of being too prophetic we refrained from stating that we believed the silo would be a factor in the transformation process then going on, although we saw in certain points of Amador county fine corn growing on the side hills where only grass had grown before.

Since that time, however, a start has been made along these lines on the ranch of David Salfield, two and a half miles from Angels Camp, and the success of the undertaking so far, together with the unique sidehill construction of the first silo in the foothill section, are well worthy of mention as they undoubtedly mark a new stepping stone in the advancement of that early day country, and bring to light some of the advantages their rolling hills hold out to the enterprising stockman.

Some two years ago Mr. Salfield purchased this ranch, with its 330 acres of rolling land, for the purpose of starting a modern dairy and of having a pleasant country home. At the time there were about eight acres seeded to alfalfa which seemed to be doing well and this with the fine water right that the ranch carried suggested vast opportunities for development of feed, the all-important factor in any country.

As the land suitable for cultivation on the ranch was all on rolling ground the methods used in irrigation were of necessity different than those in use on our level valley lands and it was also harder to get a good stand of alfalfa. By carrying the water in pipe lines to the high points and distributing from those points over the field 40 acres were seeded and last year yielded four crops of hay which averaged from one to one and a half tons to the acre. This acreage will, it is expected, be enlarged as fast as practicable.

With the success met in growing alfalfa it was decided to build a silo, and accordingly a five-acre field was planted to corn. The planting was done in May as soon as all danger of late frosts was over, and harvested in September, the average yield being about 12 tons to the acre. Wagons were used in hauling from the field to the silo this year, but in the future sleds will answer this purpose, as the sidehills make it difficult to drive over with a wagon. The field in which this corn was grown was convenient to the silo and the aim in the future will be to have a similar arrangement in order to save labor and time in hauling.

As will be seen by the drawing on this page, the location of the dairy barn, milk house, and silo were also on rolling ground, but instead of this being a disadvantage, it has proven to be a big asset for several good reasons. In the first place it furnished almost perfect drainage for the cow-stable, from which all liquids and solids are drawn into a concrete-lined pit and taken from there largely in liquid form. The second advantage was that available running water on the ranch made it possible to pipe water for flushing purposes to both the stable and the milk house and further provided running water for keeping the cream cool in the milk house as will be noted in the floor plan of that building. By locating the hog pastures below the dairy building it has been possible to carry the skim milk from the milk house to the hog feeding lots by gravitation through a pipe line.

What has proved to be the third and most unique advantage was the construction of the concrete silo to insure future economy of filling.

As will be seen by the drawing, considerable excavation was required to furnish a place for the silo to set on and an entrance way to the stable for emptying purposes. As the hill at this place was of rocky formation, dynamite had to be used, both in digging the entrance way into the hill and in making the hole in which the silo was to set. After the excavation had been completed, though the rock walls furnished the greater part of the outside forms for the silo walls, the process of construction was to erect the inside wall or core out of lumber and fill in with concrete. The thickness of this wall naturally varies where the rock furnished the outside form, but above the ground surface and exposed entrance way it was made eight inches thick and well reinforced.

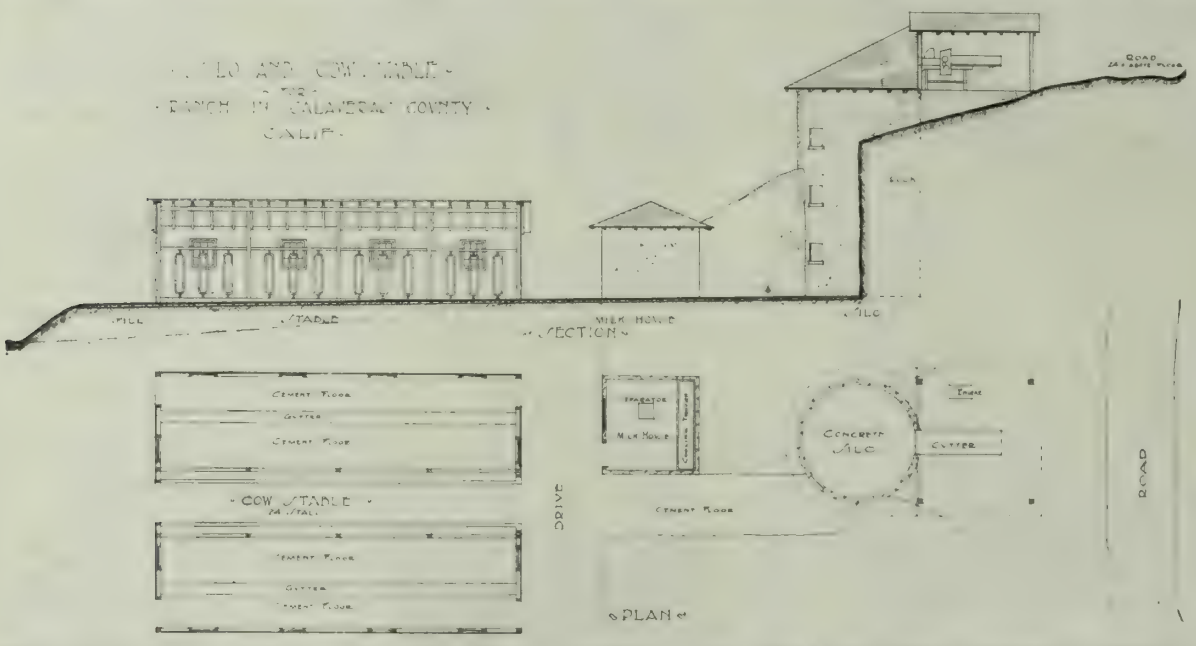
Due to its being a new venture the silo was built smaller than is usual, it being 12 feet in diameter and 22 feet high, but others which are to be erected in the future will be larger and even this one may be added to in height at some future time.

By referring again to the drawing, the advantages of the hill elevation in filling will be readily understood in that the corn from the field is hauled to the top of the silo where the cutter is located and thus does away with blowing machinery and lessens the required amount of power to a one and a half horse power engine instead of a very much larger one if the chopped corn had to be elevated by a blower.

The next silo that is erected will be built directly alongside of this one and the cutter so arranged that it can be easily shifted from one to the other as the need arises.

While making preparations for growing and storing feed, Mr. Salfield has been careful in increasing the number of cows and hogs on the place, but with the aim of having good stock as well as good equipment, he has purchased several purebred Holstein cows and a bull for his 20-cow dairy herd, 10 of which are now being milked, and is using registered Poland-China boars on his hog herd, with the expectation of eventually having a herd of 70 or 80 purebred cows and a nice-sized herd of purebred hogs.

The success of this undertaking should mean more to those mountain districts than in the dairy advancement alone, for with the vast amounts of beef cattle in these districts it opens new avenues for the feeding and finishing of range-bred cattle at the very door of the range lands. With California's varied conditions it is hard to foretell how much development silos will make possible, but certain it is that we have only seen the beginning of the silage.



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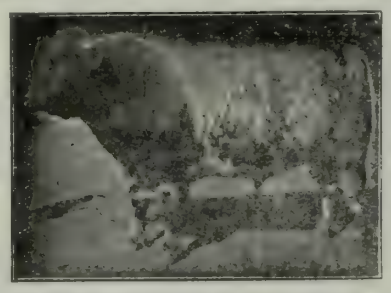
At 1914 State Fair our Shorthorns took first prize in every class we entered except two, and in these were beaten only by stock of our blood. We took all the herd prizes, first and second prizes in produce of cow and first in get of sire.



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All except the first two of the list were bred by us. We have beaten a number of bulls that were bought in the East at prices ranging from $500 to $3000 and brought out here to beat us.
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This young horse weighs 1700 lbs. Stands over 16 hands. He will make a horse weighing a ton or more. His sire weighs 2100 and his dam 1900. This colt and his sire won the California Stallion Registration Board's Special Prize at 1914 State Fair.

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W. A. YOUNG, LODI, CALIF.

Trees and the Stock Grower.

[Written for PACIFIC RURAL PRESS]

To make livestock growing appeal to a larger number of people has for many years been one of the aims of this paper as well as of all the leading agriculturists and statesmen, more especially in recent years.

That the work has been a good one, although at times discouraging, is evidenced in another column, in which a subscriber states that he is following our oft-repeated advice and is going to have a cow and some pigs on his 10-acre fruit ranch. Such measures will help, of course, and we hope to see more of it, but it strikes us that there is one thing which will help still more toward the increase in livestock and that is to make the industry appeal to a man's desire for pleasant home surroundings.

Too often, we believe, is the expression heard that "the handling of livestock is a dog's life," when in reality such is not the case. But to the uninitiated who views the haphazard home life on most stock ranches and then compares it with the orderly and beautified home of the horticulturist, the temptation for home life is too great to induce him to enter the stock business.

It is true that the viewing of a fine lot of stock and green alfalfa pastures is an inspiring sight to a lover of dumb animals and even more so to the prospective settler's bank account when he hears of the profits to be derived from this line of farming, but our climatic advantages bring thousands of settlers here who come as much for the long-dreamed-of land of flowers as they do to make money. For that reason as well as for our personal comforts, we should pay more attention to the beautifying of our home surroundings.

We shall not attempt to say what should be planted in the way of flowers and shrubs, as that is covered in another column of this paper by those more familiar with the subject, but we do believe a factor of great importance, both for beauty and utility, is more trees.

Every experienced stock grower knows that shade in California is one of the very necessary things, especially in our interior valleys, both for man and beast. As a large portion of our newly developed stock ranches have been located on bare land, there have been far too few shade trees, except in a few sections where the magnificent native California black oaks are thickly dotted over the fields, sometimes it has been thought too profusely, but nevertheless they have been worth their space in the fields for the shade they gave to the young and old stock.

That stockmen appreciate the value of these trees for shading the home grounds in some cases was shown by a chance remark we heard T. S. Glide of Yolo county make, in which he said of a fine old oak we happened to pass, "I would give $500 to have that tree in my yard."

Their worth as a beautifier of stock ranches cannot be exaggerated or improved upon, but their slow growth unfortunately does not make their planting advisable and for that reason other and faster growing trees should be planted.

There are trees which grow rapidly in California, that are not common in other States. Chief among them is the dual purpose eucalyptus, a tree that furnishes both shade and stove wood to the farmer in a surprisingly short time.

As a border along each side of the lane leading up to the residence there is nothing that presents a more pleasing sight to the eye than these mammoth giants; and we have seen instances where their use in this way presented the most striking sight on the entire ranch. When planted in groups or small groves close to the barns or in the pastures these same trees furnish almost unexcelled shelter from both sun and rain and their worth for such purposes is hard to estimate. Then too their growth in such locations is most desirable as they overcome that plain, bleak appearance so common to the California stock ranch.

Ornamentals.—As a shade around the dwelling it would be well to plant such trees as are highly ornamental and also fast growing. While there are a number of such trees that may be grown in most parts of the State, the pepper tree with its heavy foliage and striking red berries offers wonderful possibilities for shade and beauty.

As to the desirability of this tree for ornamental and shade purposes we quote Mrs. Ralph Newman of the Poppy Ridge dairy in Sacramento county, who says: "We are very proud of our pepper trees. Have twelve beauties just loaded with berries—our own planting. The past week two Chicago friends were here and they were so enthusiastic over the trees we felt we had found something of special interest to the Easterner."

The expense and time required in adding to the attractiveness of farms on which livestock are grown can, it seems to us, be afforded by every stock man and the resultant benefits for both immigration and home comfort purposes would be worth many times the effort.

A NEW HOLSTEIN HOPE

To the Editor: California breeders have long bemoaned the fact that foreign buyers did not recognize the merits of their stock when in this country buying, preferring apparently to go further East to make their purchases.

This has been especially true with dairy cattle and several large orders from Japan and the Island countries have been filled in the East, instead of stopping here, as all geographic conditions would seem to have warranted. Most of these orders were, I understand, for Holsteins.

The principal reason for this has been attributed to the fact that California breeders did not have any surplus stock of the right kind to fill these orders, but the theory has been advanced that as soon as we had a surplus of stock with exceptional worth our markets would be assured of this trade.

It has been pretty generally admitted that to attract this trade we must have something of exceptional value to offer; and while the great work done by both Riverside Sadie De Kol and Aralia De Kol was spectacular enough to please any trade, their age made it difficult to supply the State's breeders with enough bulls for them to build up a Statewide reputation along these blood lines and thus in a way the benefits were not so great as had been anticipated.

With the establishing of a new world's milk record, however, the cow Tilly Alcartra has added new strength to California's name in the dairy world, due to the fact that she is a young cow and as such will doubtless be able to furnish, through her sons and grandsons, herd sires in sufficient numbers to give California breeders almost a monopoly in her nearest descendents. [As a matter of fact there are grandsons of this cow available to breeders at this time out of the bull Prince Alcartra Korndyke, owned by the J. S. Gibson Company of Williams.—Editor.]

If this advantage is taken by California breeders at this time we will be able to establish a world-wide reputation, not only as the home of Tilly Alcartra, but also as the one place that her blood predominates in the salable sires.

Opportunities of this kind are seldom offered a State and by taking advantage of the situation at once, Holstein breders in the State can insure the future for California-bred animals.

A HOLSTEIN ENTHUSIAST.

Breeding of immature animals makes for smaller individuals, whether it be male or female.

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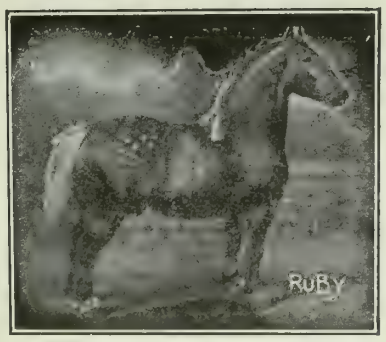

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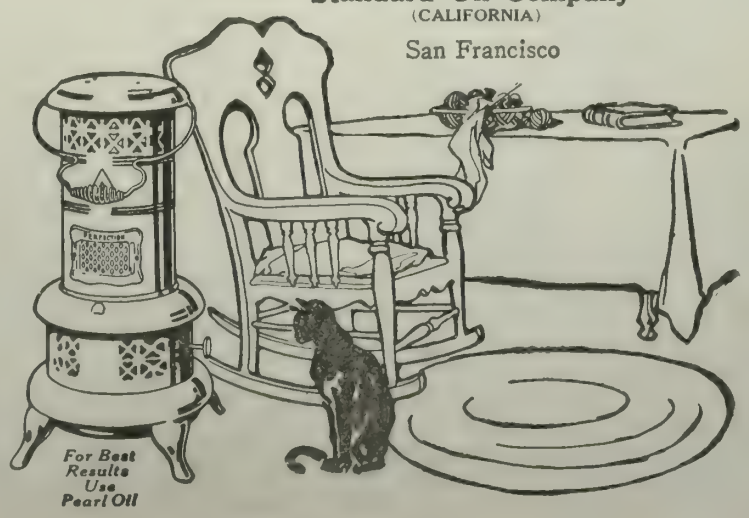

With the Live Stock Men

A report from Marysville states that sheep shipments from that place have been brisk the past month and that the business shows material gains over previous years' shipments.

Hereafter, each pound of butter made and sold by Modesto creameries, will carry a map of California on the wrapper and also proclaim to the consumer the wonderful opportunities offered dairymen in that section.

The owners of the Beckwith-Anderson ranch in Tulare county have recently received a shipment of eight registered Tammworth hogs, from Canada, which will aid them in establishing a large purebred herd of this breed.

The Gridley cow testing association, which was organized during the summer months, but which was delayed in starting, owing to lack of equipment, now has over 30 members and more than 1000 cows are being tested.

Creamerymen in Kings county paid out to dairymen about $150.000 for cream received during November. Sweet cream prices were notably higher than those paid for other grades, prices ranging from 42 cents to 43 cents for sweet cream and 35 to 39 for sour cream.

Articles of incorporation have been filed for the forming of a company, to be known as the Baker Livestock company, at Elko, Nevada, with a capitalization of $250,000. It is stated that the new organization will enter into the breeding and selling of high-grade livestock.

A report from Chico states that L. C. Shirley of Butte county now has about 1,800 sheep on winter ranges and that he may double this number next year as he believes there is more money in that kind of livestock than in others, considering the small expense for upkeep.

Announcement comes from Hollister that a part of the famous Elmendorf herd of Shorthorn cattle recently purchased by the Paicines Ranch company, in Kentucky, will arrive in this State some time during April and that three of them will be exhibited at the Panama-Pacific exposition.

A heavy loss of sheep is reported to have been experienced by T. W. Harlow, of Glenn county, last week, when some 200 of his flock foundered on grain picked up from a stubble field. It is believed that the moist condition of the grain that was picked up was the cause of the loss.

Hewitt and Hewitt, of Hardwick, Kings county, write that they have recently sold two registered Holstein bulls in Kings county, one in Fresno county and one to be used on S. H. Cowell's ranch in Sacramento county. They have also sold two purebred Poland China boars to Los Angeles men.

Are American horses subject to the same rules of international peace treaties as other weapons of war, is a question that the Western Humane Association is asking. They claim that we have no more right to send horses to the warring nations than we have of sending arms and ammunition at this time.

In writing this office from Modesto, John Daggs, breeder of Duroc Jersey swine, states that he has just returned from the Arizona State Fair, where he sold 20 head of gilts. California breeders who have visited this fair, tell us that it is a high class show and well worth attending, even though transportation difficulties do arise.

An increase of $10,000 over that paid out for October cream was received by dairymen in Fresno county for November cream. The total paid out by all creameries in that county was about $100,000, half of which was distributed by the Danish creamery. The average price paid for fat is reported to have been 40 cents a pound.

After his last sale of Holsteins at Corcoran, Geo. A. Smith announced that it is his intention to continue with his semi-annual sales of Holsteins and also hold a Poland China hog sale next spring. It takes nerve to step out of the well-trodden path into something new and far-seeing stockmen will wish him success in his new ventures.

At the sale of dairy cattle and hogs, held on the Tagus ranch in Tulare county, last week, 320 head of cows were disposed of and 700 head of hogs. The sale was conducted on practically a cash basis, fresh cows averaging $90.50 and dry cows $73. Sows with litters of pigs averaged $40 to $50 and six-month-old hogs brought from $8 to $11. The total sales aggregated between $20,000 and $21,000.

Leading vegetarians in Nevada and California are studying a strange disease which has been discovered among cattle in the Carson valley of Nevada. It is said that the disease manifests itself acutely, is accompanied by a temperature and is often fatal in a few hours, although there are recorded recoveries. It is not so general or destructive as to cause panic, although the persistent loss is felt by the ranchers.

A number of mule breeders from Modoc county, arrived in Shasta county last week enroute to Tehama county, with 100 head of mules, ranging in age from 3 to 5 years and weighing around 1,000 pounds.

Due to the advance in price, three of the Tulare creameries paid out over $82,000 for cream received during November, this amount being about $3,000 more than the amount paid out for receipts the month previous.

An enterprising newspaper man at Ripon, San Joaquin county, has offered a suggestion that farmers and merchants of that place hold a ham and bacon show some time during the next few weeks. A report from there says that many farmers in that neighborhood are curing their own hams and bacon and that a show of this kind would make that district famous for home-cured bacon and ham. The idea might be worth the consideration of other hog-raising communities.

A noticeable point in the promises for consignments so far received by the directors of the California Horse Breeders' association is the class of breeders who have taken the matter up. Without exception they are men who have spent many thousands of dollars in the development of the purebred horse industry of the State and their support of this sale shows that the directors of the association have hit upon a popular plan of helping the horse industry. The association is now busily engaged in securing consignments, which are solicited from every breeder or stallion owner, whether he be a member of the association or not.

Reports from Modesto indicate that buyers of horses suitable for army purposes are operating in that field as well as elsewhere in the State. Whether these buyers are purchasing for foreign countries or are merely speculators, is hard to say. Several San Francisco buyers claim that all buying so far has been done by speculators who hope to reap a rich harvest when the actual orders from Europe do reach here. It is of little concern to the farmer, however, whether the buying is speculative or by authorized agents, so long as sales are made and money received

Live Stock Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

HORSES AND MULES

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old; also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE—14 mules, from weanlings up. One mammoth Jack and some Shetland ponies. Zack Tompkins, Sunnyvale, Cal.

REGISTERED BELGIAN STALLION for sale. Weight 2150 lbs. Apply F. Stenzel, San Lorenzo, Cal.

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REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

TEN REGISTERED HOLSTEIN COWS for sale. Young and more with big records. Also a few well-bred heifers and bulls up to nine months old. K. W. Abbott, Milpitas, Cal.

AYRSHIRES—For sale, fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, write E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

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HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

FRANK MEACHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class, thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

FOR SALE—Registered Holstein Bull Calf, two months old from heavy producing cow. W. N. Totman, Emmaton, Cal.

JOHN LYNCH, breeder of Registered Shorthorns. Milk strain choice. Young stock for sale. Box 321, Petaluma, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

REGISTERED HOLSTEIN FRIESIAN CATTLE and Duroc Jersey Hogs. W. H. Ginn & Son, Corcoran, Cal.

REG. JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

HOLSTEINS—Registered exclusively Tuberculin tested. Linwood Farm, Santa Cruz, Cal.

REGISTERED HOLSTEINS—Auctioneer and Breeder. F. J. Gilkerson, Stratford, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Son, Chino, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM—Pure-bred Holstein cattle, Los Banos, Cal.

PACKWOOD FARM HERD of Holsteins. W. F. Mitchell, Visalia, Cal.

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REGISTERED BERKSHIRES—Weanling boar pigs. $10.00 each. A few older boars. J. M. Bomberger, Modesto, Calif.

BLUE RIBBON HERD DUROC-JERSEY HOGS—Bred Gilts a specialty, 15 bred now, 20 ready to breed. Sires and dams win all blue ribbons 1912, 1913, 1914 State fairs. 15 first, 13 seconds, 6 thirds, 7 fourth, 1 fifth. Will show 1915. For prices, write Jno. P. Daggs, Modesto, Cal.

O. I. C. SWINE—The White Breed. Entire herd immunized against hog cholera. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars in use. All stock sent out will be immunized, registered and crated at purchase price. Send your orders now. C. B. Cunningham, Box J. Mills, Sacramento County, California.

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BERKSHIRES—Bred for size and bone and quality. Herd boar won Gold Medal at Nevada State Fair, 1913. Write for pedigrees and prices. J. L. Gish, Laws, Inyo county, Cal.

REGISTERED BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

BERKSHIRES—Utility and choice Registered Pedigree stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REGISTERED DUROC JERSEYS from Eastern stock. Sows and boars for January delivery. S. S. Southworth, Napa Cal.

POLAND CHINAS—Young stock. Either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

POLAND CHINAS—A few boars ready for service and guaranteed to please. Geo. V. Beckman, Lodi, Cal.

REGISTERED DUROC JERSEYS—Defender strain. Allen Thompson, Tulare, Cal.

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DUROC-JERSEYS — Prize-winning Boars and young stock for sale. J. K. Fraser, Denair, Cal.

DUROC-JERSEYS—Both sexes for sale. M. L. Fleming, Hanford.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in state. $30 up. M. Bassett, Hanford.

REGISTERED POLAND-CHINA HOGS—Cholera immune. W. D. Trewbitt, Hanford.

POLAND-CHINAS—Prize-winners Money-makers. W. Bernstein, Hanford, Cal.

DUROCS from first prize winners State Fair. $15.00 up. Ed. E. Johnson, Turlock, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderas Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

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DUROC-JERSEY REGISTERED BOAR PIGS. H. E. Boudler, Napa, Cal.

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POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

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CHAS. KIMBLE, Breeder and Importer of Rambouillets, Hanford, Cal.

MISCELLANEOUS

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

Alfalfa and the Draft Horse.

There have been many reasons advanced why California should become a truly great purebred draft-horse-breeding center with her mild climate, hilly lands and geographical location, but judging by a bulletin recently issued by the Agricultural Experiment Station of Nebraska we have overlooked in a large measure the greatest of all assets, alfalfa.

In this bulletin are given the experiences of some of the largest and most successful horse breeders in that State and all are unanimous in their opinion that alfalfa is the greatest single horse feed that there is both for breeding animals and for fattening horses for market, a feature of horse-growing that has received more attention in the east than in this State, although one well worthy of more consideration on the part of our farmers.

One of these breeders has the following to say which answers many questions that are apt to arise in alfalfa feeding. He says: I am a firm believer that alfalfa is the proper feed for horses of all ages—for growing colts, for work horses, and for fattening horses.

"I have never had any bad results from overfeeding, but am careful not to feed wet alfalfa hay. For growing colts, I think it best to feed some straw or cornstalks with the alfalfa.

"For developing horse and mule colts from one to three years old, I find 10 pounds of alfalfa hay per head per day in dry lots with a little corn fodder or wheat straw makes a splendid feed. They will grow well and actually get fat. They even do better than when fed prairie hay and 10 pounds of corn or oats. Five pounds of alfalfa per head per day to the same class of stock when running in field or cornstalks will make a better growth than as many pounds of grain.

"I fed 50 head of three and four-year old colts one winter in a dry lot on alfalfa and wheat straw, at an average cost of 12 cents per head per day. They did fine—were fat and ready to break in the spring. They were sold to farmers who realized a good summer's work, as the colts were in splendid condition.

"I have fed the same class of colts on alfalfa alone and find that they eat too much, get paunchy, their legs swell, their hair becomes rough, they become lazy, and will not exercise enough. Furthermore, the cost of alfalfa fed alone is too great. [The cost of hay in California would not be so great as in Nebraska.—Editors.]

"For the work horses, I feed a liberal amount of alfalfa, but do not allow them to stand to a manger full all the time. I work my horses hard (using hired help) and they keep up well. They also stand the heat and have good wind. But I am always careful not to let them gorge themselves on alfalfa (or any other feed) when they are not at work, as on Sundays and rest days.

For fattening horses, I always feed all the dry alfalfa hay the horse will eat, together with ground alfalfa meal mixed with coarse ground corn—using a self-feeder.

"I prefer coarse alfalfa hay, first or second cutting, and want the alfalfa rather ripe or in full bloom when cut. Horses do not care for alfalfa leaves. The leaves should be taken out of the horse mangers and fed to the cattle, as cattle will clean up exactly what the horse does not want, and likewise the horse will eat the stems of alfalfa hay after the cattle have left them.

"I have never had anything but good results from the feeding of alfalfa to horses, and have fed it in all forms to thousands of them during the last ten years."

From this it will be seen that our great acreage of alfalfa should play a far more important part in horse raising than it has in past years, and demonstrates that while high-priced meats may push the horse off from our mountain ranges we shall always have abundance of the best feed for developing both breeding and market horses.

That this same alfalfa will always be a factor in using horses for farm power is further brought out in the bulletin by a statement of facts concerning the cost of feeding a grain and alfalfa ration to work stock. The only difference which should be made in this experiment to apply to California conditions would be to substitute barley instead of oats and corn which were used, otherwise the figures given are thoroughly adaptional to the California farmer. The following tabulations are given for two horses and four mules that were fed under test for four months:

NAME OF ANIMAL	Age	Kind of hay	Hay per day	Grain per day	Wt. at beginning	Wt. at close	Gain or Loss	Amt. of work done	Cost of feed per day
			Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Hrs.	Cts.
Nig (horse).....	10	alfalfa	20	15	1,720	1,760	+40	8	24½
George (horse)	11	pr. hay	20	15	1,690	1,670	—20	8	24½
Jeff (mule).....	5	alfalfa	10	12	1,350	1,330	—20	7	16½
Jewell (mule)..	6	pr. hay	10	12	1,340	1,300	—40	7	16½
Dina (mule)	10	alfalfa	10	12	1,240	1,260	+20	7	16½
Queen (mule)	10	pr. hay	10	12	1,200	1,210	+10	7	16½

It should be noted that these animals were rather larger than the ordinary farm animal, but for draft horses they serve admirably. In figuring the cost of feeding the price of alfalfa hay was set at $10.50 a ton, which is considerably over the average California farm price for loose hay, and therefore we may conclude that the cost of feeding here would be considerably less than that given.

From the statement made by the farmer in the above it will be noted that the amount of feed given when horses are not working is materially lessened and for that reason we should not figure the total cost for the year at the figures given in the experiment unless the animals were worked every day, a condition that does not often arise in farm work.

Similar experiments carried on in this State would be of great value in showing why farmers should build up a reputation for horses through alfalfa the same as they are attempting to do with all other kinds of livestock.

A dairyman recently reported that out of a herd of 125 cows, there were only 30 that were actually found to be making him money when tested regularly by the local cow testing association. Some loss there apparently.

Having ample storage space for water from mountain springs is an important item for all range men to look out for. A series of water troughs connected with one-inch pipes having sufficient capacity to hold a night's run of water will enable one to water far more stock from a spring than if the water is allowed to run from the spring upon the ground. There is also less mud.

Don't blame your creamery man for being a crook till you test regularly yourself. As a rule dairymen following this practice find crooked cows more often than crooked creamery men.

PALCE YOUR ORDER NOW
For An IDEAL GREEN FEED SILO

YOU WILL NEVER BEGIN TO MAKE the profit you ought to from your cows until you start to feed them silage. No cow-owner or stock-raiser can afford to get along a single year without a silo.

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I have some good stallions for sale and a few young mares.

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You had better buy now, as importations have stopped.

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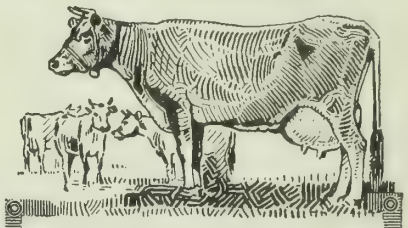
HENRY WHEATLEY,
Napa, Calif.



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YOU can increase the supply of milk from your cows at least 1 to 5 lbs. per cow a day by feeding Larrowe's Dried Beet Pulp. It is put up in 100-lb. sacks and can be had either plain or with molasses. Order from your dealer NOW.

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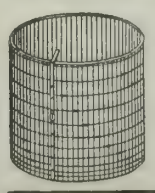
A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Holstein Breeders

I am going to New York the latter part of December and will be present at the Dispersal Sale of the E. H. Dollar herd of 170 of the greatest Holsteins in the world. Will also attend the N. Y. Breeders' Sale Jan. 13-14. I will buy and deliver to any California breeder who wishes to take advantage of carload rates and first-cost price from the East. Correspondence solicited.
E. J. WELDON.
Box 962, Sacramento, Calif.



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10-dose pkge. Blackleg Pills $1.00
50-dose pkge. Blackleg Pills 4.00
Use any injector, but Cutter's best.
The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct.
THE CUTTER LABORATORY, Berkeley, California.

Dairy Cow, Hogs and Orchard.

To the Editor: I am adopting your oft-repeated advice to raise some stock on the small farm. I have ten acres in apricots and am buying a cow and her calf, and immediately a lot of questions come up which I would like you to answer if the subject is of sufficient general interest.

I want to feed my cow as much as possible on products of the place. Have an alfalfa patch and can raise beets, corn, etc. between my orchard trees. This cow has been raised on pasture (grass) and dry chopped feed. Has never eaten alfalfa, green or dry. Am cautioned against feeding her alfalfa, especially green. What is your advice in regard to feeding her most economically, and also as to working her over to the new kind of feed? Can buy alfalfa hay at $8.00 per ton.

What is the best and most economical method of feeding the calf? I want to use as much as possible of the milk for household and sale. Will it pay to raise the calf on the place?

The cow is a thoroughbred Jersey and calf also, as she was bred to a thoroughbred bull—not registered. The calf will be about ten days old when they are delivered to me.

After calf stops using milk, and I have, say two gallons of skimmed milk per day, would it be sufficient for one or two pigs, together with other green feed? What kind of other feed is best?

I have a chore man on the place and can raise all necessary beets, corn, pumpkins, etc., without interfering with orchard.

I am purchasing this cow merely because I want my own milk, but at the same time some of my neighbors will buy a gallon of milk a day and I want to make it pay if it can be done.—R. H. B., Los Altos.

[We should say that alfalfa hay and beets would be the logical feeds for you to use as feed for your cow in view of the fact that you say you can raise both crops on your ground. The larger portion of our dairymen use alfalfa hay exclusively but an addition of beets aids greatly for a milk-producing ration. We would not advise pasturing, as there is great danger of the cow bloating on such feed. Neither in your case would we advise soiling (cutting the green alfalfa and feeding it in racks), as that would necessitate a lot of extra work and the results for one cow would not warrant the cost. We do not believe you will experience any trouble by starting to feed the cow alfalfa hay from the time she arrives, for even though she has never eaten of it before she will acquire an appetite for it in a surprisingly short time. If the cow is anything like a good producer you can afford to buy good alfalfa hay at $8.00 a ton, but you should remember that there are all grades of hay, and cows will not do so well on coarse hay as they will on hay that was cut just before the bloom. By raising your own hay you can better regulate this factor. If the calf is from good parentage and a heifer we should certainly raise it whether we desired to keep it for our own use or not, as the price of female dairy stock of all ages is too high to think of selling them to the butcher when so young. As you say the calf will be 10 days old when delivered, we would suggest that you feed skim milk to which has been added oil meal or one of the especially prepared calf feeds. By gradually cutting down on the whole milk and adding skim milk in its place, together with a small amount, say a teaspoonful at first, of the soil meal, your calf should prosper. Be careful to feed the same amount every meal, gradually increasing the ration as it grows, and keep a small amount of good alfalfa hay in front of it as soon as it shows a desire to eat such material.

With or without the skim milk you should be able to keep a couple of pigs, but of course having the skim milk will make it easier. Any of the feeds that you mention will be good for the hogs and with skim milk, pumpkins, alfalfa and beets you will not have to furnish any other feed unless it be rolled barley, a moderate amount of which could be profitably fed in the ration at all times. We are glad to know that fruit growers are coming to recognize the need of more livestock and believe the time will come when farm animals will be maintained on such places for the fertility they supply if for no other reasons.—Editors.]

COTTON SEED MEAL AS STOCK FOOD.

To the Editor: What is the feeding value of cotton seed meal to milch cows? Is it as good as bran at the same price or not, and what would be the best way to feed it to get good results?—A. R. K., Elsinore, Cal.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

[Cotton seed meal can be fed safely to dairy cows in large quantities, if desired. Ordinarily, however, only a couple of pounds per head daily are fed, in mixtures with other concentrates. It is not particularly palatable to cows when fed alone and is, as a rule, expensive in comparison with other grain feeds. It has, furthermore, an undesirable effect on the quality of the butter when fed excessively, making it hard and tallowy, which is important in case the milk is used for making butter. At the same price as wheat bran, it is a cheap feed, however, and especially if fed with grain hay or wild hay a mixture of wheat bran and cotton seed meal, equal parts by weight, will make a good combination. In case the roughage fed is alfalfa hay, it would hardly be advisable to feed more than about a pound of cotton seed meal per head, if it be fed at all. The best grain feeds in this case would be barley and wheat bran mixed in the proportion of 3 or 2 of the former to 1 pound of bran, according to the market prices of the two feeds. Alfalfa hay, cotton seed meal, and wheat bran are all protein feeds and rations made up of these feeds will contain too much of this compound for best results, both as regards production and the health of the animals. Cereal grains, dried beet pulp, etc., with low-protein feeds, like mill feeds, therefore, had better be included in the ration when alfalfa is fed.]

Chopped alfalfa hay is more economical to feed than whole hay and does not require so much storage room.

Locate the dairy building on ground with good drainage if possible and thus overcome many of the weather obstacles.

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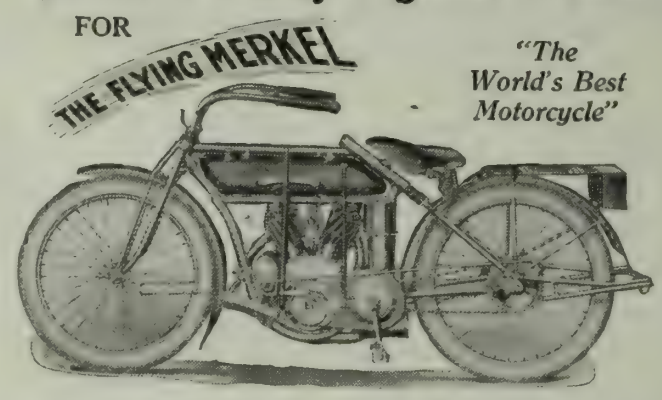

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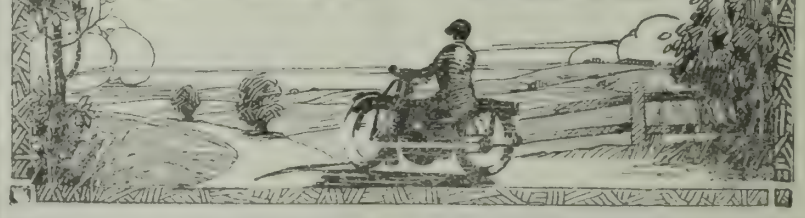

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Veterinary Queries and Replies

[Answered by Robt. Boyd, San Francisco Veterinary College.]

COW WITH DIARRHOEA.

To the Editor: After harvesting my corn in October I turned my cows into the corn stocks. This feed seemed to make one cow's bowels very loose. I took her out and put her in another field, which contained dry pasture and a stack of wheat, bur clover, wild cat and barley hay. She did not seem to improve so I put her where she could get only barley hay and bur clover. On November 24 I gave her one-half pint of castor oil, and on November 26 I gave her the following: Prepared chalk 1 ounce, powdered oak bark ½ ounce, powdered catechu ¼ ounce, powdered opium 1 scruple, and 1 drachm of powdered ginger. This treatment seemed to help her and she got better for several days, but as she was thin I gave her a little ground barley night and morning, which again brought back the diarrhoea. I wish you would tell me what to do for this cow, also what to give her to eat. She was milking when the trouble started, but I immediately dried her up.—E. A. P., Vacaville.

[It would appear that the cause of the diarrhoea is indigestion. I would, however, recommend you to have her tested for tuberculosis. If the cow's bowels are normal when this appears try boiling the barley ration, taking care not to boil more than one feed at a time so that feed will not sour, and feed clover hay and give the following: Powdered ammonia carbonate 6 ounces, tincture nux vomica 5 ounces, tincture ginger 5 ounces, water to one pint. Give two wineglassesful in two pints of water, ale, or beer, three times daily after feeding. If bowels are not about normal try the following astringent after a mild physic such as a pint of raw linseed oil and two ounces of turpentine. Mixture for diarrhoea: Prepared chalk 2 ounces, tincture of opium 2 ounces, tincture catechu 2 ounces, spirits of chloroform 2 ounces, water to 8 ounces. Give two wineglassesful twice daily in one pint flour gruel; after bowels return to normal, try the above tonic.]

WORMS IN HORSES.

To the Editor: I have a mare eight years old who has just been weaned and is now in foal again, who is a voracious eater, never seeming to be satisfied. I notice lately that she passes a few worms. I have been told to give her copperas in bran, but would like your advice on the matter.—T. J. C., Healdsburg.

[Give the mare one of the following twice daily for six days, after which administer the following drench after starving for 24 hours. Take care to have some competent person administer the drench. Tartar emetic 1½ ounces, exsiccated iron sulphate 1½ ounces, powdered gentian root, 2 ounces, powered anise 2 ounces. Mix and divide into 12 powders. Drench to be given after all have been administered: oil of turpentine 1 ounce, spirits of nitrous ether 1 ounce, and 1 pint linseed oil.]

HORSE LOSING SIGHT.

To the Editor: I have a work mare weighing about 1300 pounds who appears to be going blind in her right eye, and as she is only five years old and not overworked I would like to know if there is not some way in which this could be prevented. The eye appears to be normal except for a faint round, blind gray, cloudy-like spot a little to the left of the pupil.—F. F. T., Patterson.

[From your description this would appear to be ophthalmia (an inflammation of the membranes or coats of the eye or of the eyeball) possibly as a result of a wound. Try injecting into eye twice daily by means of an eye-dropper a few drops of the following lotion: Zinc sulphate 2 grains, rose-water 1 ounce.]

RICE STRAW AS A HORSE FEED.

To the Editor: Will you please advise me as to the value of rice straw as feed? I am a new-comer—such differences of opinion about it, that I cannot come to any conclusion. Some tell me it is very good and some that it is injurious. One man told me that it causes constipation in horses, and another that it has the opposite effect. My own experience with it consists of offering it to one cow, which declined to eat it, and two horses that seemed rather fond of it. It is plentiful and easily obtained in this section.—S. N. W., Butte City.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

[The writer has not had any experience with feeding rice straw to stock, but it is used for this purpose to a limited extent in rice-growing countries, particularly India, where cattle receive no other roughage other than straw of rice and the grain sorghums. Farmers in Southern Europe are also reported to be feeding rice straw to their cattle.

Rice straw contains somewhat more digestible protein and less carbohydrates and fat than straw from the small grains; its chemical composition is as shown below. The digestible components in oat straw are also given for the sake of comparison.

	Straw Per ct.	Rice Straw Per ct	Oat
Digestible Protein	2.5	1.6	
" Carbohydrates	30.8	41.4	
" Fat	1.0	0.7	

If the fat is multiplied by 2.25 in each case to allow for its higher value for heat production than that of the carbohydrates, and the product is added to the percentages of digestible carbohydrates and fat, we find that rice straw contains 35.6 pounds of digestible substances in every hundred pounds and oat straw 44.6 pounds. These figures may be safely assumed to represent approximately the relative value of the two kinds of straw. Rice straw contains over 10 per cent of ash, against 5.1 per cent of oat straw; this excessive ash content accompanied by the large fiber content of rice straw accounts for the fact that stock do not take readily to it; the hard silicious stems especially tend to lower its palatability and feeding value.

In Hungary rice straw is made into silage by being placed in large piles in the fields that are covered with a layer of dirt. The resulting silage makes a succulent feed of a light brown color and a strong acetic-acid odor; it is greatly relished by cattle and when fed in moderate quantities, makes a good stock feed. With the growing importance of the rice industry in the upper Sacramento Valley, it becomes important that our farmers utilize so far as possible whatever feeding value there is in the straw. The silo, doubtless, offers the most promising method of securing full value for stock feeding from this by-product. Good silage can be made from ripe oat straw by running it through a cutter and wetting it down thoroughly as it goes into the silo, and the same method would change rice straw into a desirable roughage feed that would be especially valuable as a supplement to alfalfa for feeding dairy cows.]

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Have you weighed and tested your milk once a week the past year? If not better start in the morning and see how much old Bess is running behind in production even if she is the "nicest old cow in the herd."

A purebred bull is not always capable of increasing the production in a herd, but the chances are all in his favor and never with the scrub bull.

Poultry for Profit

[Written for PACIFIC RURAL PRESS
By Susan Swaysgood, Pomona, Cal.]

Poultry for Helping Out High Cost of Living.—The fruit grower and small farmer, is just a little too apt to specialize in these days. From some points of view this may be very desirable, but from the financial point of view it is simply ruinous. When pay day comes but once a year it is very likely to be met on its journey with debts and mortgages that eat it up before the farmer has a chance to count it. The poor man, therefore, can't afford to specialize; he must have several irons in the fire at once if he is going to keep the pot boiling; and I don't know of anything that fits in better than a nice flock of poultry.

There is always more or less waste on the farm, no matter how small it may be, and there should be something to eat it, and poultry fills the bill better than anything else.

The eggs cut down the cost of living, and if well managed there can always be a chicken for Sunday dinner that saves the pocket-book. A few dozen eggs to trade for groceries in flush seasons is another saving, even though there may not be much actual cash made by it the money is made in the saving of expense.

A small flock, well cared for is always more profitable than a large flock neglected. And in these days of high-priced meat it certainly would pay every farmer to at least keep a flock of chickens to supply his own table with meat and eggs. The dual purpose fowl will answer his purpose best because when a fowl is needed for the table it will be worth the trouble of cleaning and preparing. Any good strain of Rocks, Reds, Wyandottes or Orpingtons will fill the bill for eggs and meat. During the flush season of eggs a supply for family use can be packed away in water glass, as this method of preserving eggs is thoroughly reliable, and then if the flock lays in winter, as they surely will if fed right, these eggs can be sold when prices are right and pay for the cost of keeping the fowls and a little over. One of my neighbors has a flock of fifty that have averaged him $1.40 cents each for the year. He kept strict account of all food bought and all eggs sold, but considered the eggs used on his own table as pay for his work. All chickens killed for table use were credited at fifty cents each, which was not a high price. This man lives on an orange grove and his chickens have the run of the orchard, but nothing in the way of feed except perhaps a few bugs.

Now all this fuss about reducing the cost of living, amounts to just what it is worth in paper and ink, the people themselves must do the reducing, those who won't or can't are in an unfortunate condition, because they will either have to pay or go without. The man with the land can reduce the cost of living, if he will put his shoulder to the wheel and try.

Every farmer can fix up a poultry house and also a run, if he does not want them to run at large at a very small cost, and if he does not want to invest in hens, let him buy a hundred chicks and raise them, or buy a couple of setting hens and get eggs of the kind he wants and hatch them with the hens.

Other Farm Fowls.—Pigeons are another good thing for the small farmer or orchardist to keep, if he is well out in the country; the pigeons will do very well with their liberty; they can be fed once a day and that will bring them home, and there is no more delicate dish than a good fat squab. When I think of the years I lived in the country without keeping a few pigeons for home use I just want to kick myself. They are so little trouble and give such good returns that really everybody should keep a few. Ducks are another thing that can be handled with little room and at such a small expense that all who can should keep a few. It is not advisable, however, to keep ducks and chickens together, they must have separate yards and runs for either to do well. But the pigeons may be kept in the loft over the granary or stable or in an old chicken house, anywhere that gives a shelter, and they will pay you too 100 per cent by furnishing you the richest and most delectable dish you ever ate.

To the man or woman who wants to start in this work and yet is afraid it will keep them from other enjoyments, we will say that if they go into it with the right spirit, they can get more solid enjoyment out of a few well-kept hens than any other form of country work. There is always a possibility of raising an extra good bird and the pleasure of watching it grow and develop adds much to the value of country life. Where thoroughbred stock are bought the eggs can be advertised and sold for hatching and the money comes in at a time when there is very little else coming in, thus making it twice welcome. The farm is the natural home of poultry, bees, pigeons and ducks, and where there is range, of turkeys, but there is no profit in trying to raise turkeys without range. True some people do manage to raise a few turkeys by artificial methods, but it is simply because they are over persistent, patient and careful.

PULLETS DON'T LAY.

To the Editor: Will you please tell me through the Press what is the reason my pullets do not lay? I have 200 white Leghorn pullets and I feed them corn in the morning in litter, and at noon a mash consisting of bran, two parts, middlings, one part, a handful of bone and about three handfuls of beef scraps and same amount of oilmeal, all scalded, and corn again at night. I have kept at it now for so long that I am despairing of ever getting any eggs. The pullets were hatched in the middle of April and look healthy, but no eggs. Is there any other breed of chickens that will lay in winter?—Mrs. J. W., Turlock.

[Now I am always sorry for people that are depending on the results of their poultry as this lady is, but there is nothing for it but more feed. That is the whole secret of winter eggs, and at the prices we are getting now and have been getting for the last month I don't really know that it pays to try for winter eggs. This good woman feeds faithfully, but she does not feed enough; feeding for winter eggs must be done on the plan of making gooseberry pie—put all the sugar (feed) in that your conscience allows, then shut your

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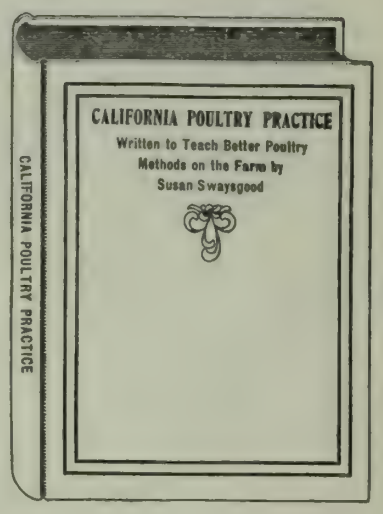
On the Farm



BY

SUSAN SWAYSGOOD

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30 The Mediterranean Class.
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Mrs. Swaysgood has spent a lifetime in raising poultry, mostly in California. This cloth-bound book of 160 pages, besides half-tone pictures, tells of the up-to-date methods now used on California poultry farms. Every reader of this journal should have a copy.

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Pacific Rural Press

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eyes and put in some more. This is the whole secret and there is no short cut. The hen requires more food in winter to keep her in health, and nature always looks after that end of the deal first; the surplus goes to make eggs. So whenever we see a flock of hens or pullets that look nice and healthy, yet do not lay provided they are fully matured, the feeder is just stopping short of the "surplus," that nature demands to produce the goods.

We have been getting more eggs than anyone in these parts, even with the same kind of hens, but we have fed a sack of Egyptian corn a day besides mash, green feed and animal food, so that we really have produced the eggs at a very small profit, and, as I say, considering the extra work it is a question whether it pays or not.

This good woman appears to think that there is a secret about getting winter eggs, and in a way there is, but it is one of plenty of feed, and all money spent on dope would be better invested in good sound grain. I know there are times that we feel that something fed out by a spoon is going to bring those eggs, but it is a snare and delusion, for unless the feed is given the spoon stuff will have no effect whatever, except to act as an irritant. I have gone into this question at length because this is a poor woman who says she is getting her feed on time, so I can sympathize with her and if there was any short cut to eggs would surely tell her. Care and feed spell the whole secret.]

INFORMATION ABOUT RUNNER DUCKS.

To the Editor: I am desirous of obtaining advice on the care and feeding of Runner ducks to get eggs for selling on market when prices are highest. from some one who has had practical experience and success in the management of them. Do you know of any authority on this subject?—E. M., Stockton.

[The very best advice for raising Runner Ducks in California can only be obtained in California. There is no difference between the raising of Runners and other ducks and the subject is fully covered in "California Poultry Practice," price $1, from the Pacific Rural Press. If not satisfied with the information contained in the book go to some practical breeder's yard and get information along with your purchase of breeders.]

George H. Croley reports that the organization of the California Federated Poultry Association is meeting with immediate response from the public. The great losses now met with in every branch of the poultry industry can mostly be saved by intelligent action under a good leader. At this time poultry raisers would do well to write Mr. Croley, offering their moral support at least to the efforts being made for the good of the industry.

Members of the Pajaro Valley Poultry Producers' association are considering the holding of a poultry and pet stock show in the near future. At a recent meeting of the association S. E. Elliot was chosen as president and G. H. Buhrman elected secretary.

WOMEN CONDUCT POULTRY SHOW.

[Written for PACIFIC RURAL PRESS By Mrs. Virginia Porter-Hewitt Hardwick.]

The Mothers' Club of Hardwick, Kings county, many members of which are very successful poultry raisers, has the distinction of financing and staging the first women's poultry show in the State. It was highly successful in every way, reflecting great credit on the community and upon the committee in charge. Upwards of 100 entries of fowls and pet stock were exhibited and judged by Prof. J. E. Dougherty, of the University of California. There were no cash prizes, ribbons being awarded to birds representing white Minorcas, barred and white Plymouth Rocks, buff and black Orpingtons, buff and brown Leghorns, Houdans, light Brahmas and R. I. Reds. Mrs. F. P. McClain won the sweepstakes for the best pen shown with Rhode Island Reds.

After the judging Prof. Dougherty gave an interesting talk covering the field of breeding for eggs and also feeding and housing for eggs when the frost is in the air.

ROUP IN TURKEYS.

To the Editor: For the above trouble squirt the throats, eyes and sore places on heads and wattles with hydrogen peroxide, diluted with an equal volume of water twice daily. A 25 cent "ulcer springe" of soft rubber is the best squirter and all druggists sell them. Wipe and pull the yellow webs from throats and mouths with cotton, dipped in the peroxide; also remove warty swellings from the cheeks and nostrils as soon as they begin to shrivel up. After applying the peroxide squirt to the surfaces beneath. Isolate the sick birds, and as a good precaution, squirt the throats of the entire flock with the diluted peroxide once a week or so, while the epidemic lasts.

This method, adapted from directions in the U. S. Agricultural bulletin, has cured two very bad cases and several milder ones for me and not one case died.—Mrs. R. C. D., Los Angeles.

A recent census of the turkey population on the Carson-Truckee project, in Nevada, revealed the fact that there were 7,500 ready for the holiday markets and 2,500 which were to be kept for breeding purposes.

According to Manager L. N. Foss, the Tulare Co-Operative Poultry association paid out to producers $3,560 for poultry and eggs received during the month of November. This is an increase over that paid for October receipts.

Poultry Breeder's Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

TO THE POULTRY FARMER—We now have under construction a modern Hatchery, and are booking orders for BABY CHICKS from our heavy laying strains of S. C. White Leghorns and White Plymouth Rocks. We solicit your order for 1915 delivery, and know that you will be well pleased with the high quality of our stock. Write for prices on Sept. and Oct. hatched pullets, and year-old hens for breeders. Hopland Stock Farm, Hopland.

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MACFARLANE STRAIN White Leghorn Eggs. $5.00 per 100, chicks Jan., Feb., $12.00, afterward $10.00. Order now, any quantity Cockerels, $2.00; White Rock eggs, chicks, cockerels. Write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. N. B., See article about us by Prof. Adams, U. C., in October "Poultrycraft."

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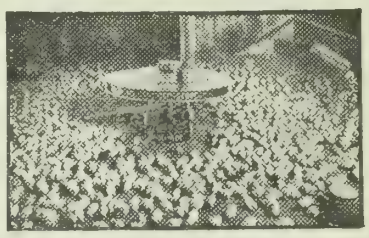

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The Home Circle

CHRISTMAS BELLS.

I heard the bells on Christmas day
Their old familiar carols play.
And wild and sweet
The words repeat
Of peace on earth, good will to men!

And thought how, as the day had come,
The belfries of all Christendom
Had rolled along
The unbroken song
Of peace on earth, good will to men!

Till, ringing, singing on its way,
The world revolved from night to day,
A voice, a chime,
A chant sublime
Of peace on earth, good will to men!

Then pealed the bells more loud and deep;
"God is not dead; nor doth He sleep!
The wrong shall fail,
The right prevail.
With peace on earth, good will to men!"

THE LAME BOY'S GIFT.

By Frances Harmer.

The children lingered in the Sunday-school, for it was very cosy and warm, and the outside world was very white and cold. They were glad of snow, of course, for was not Christmas two days off?

So they gathered round the stove, postponing to the last moment the scamper across the snow path to the church for the mid-day service.

"Oh, I have one more thing to say, children," cried Miss Winter, the teacher. "You know that we decided to have a Christmas tree for the factory people, the day after our own tree, and we hope to fill it, or nearly fill it, from our gifts. Now, will each one promise some one thing definitely?"

Gladys Gray and Hilda Leslie spoke together, as they so often did.

"I'll bring a doll!"

Winnie Brown and Mary Short said—

"We'll make candy and tie it up in bags. We can bring as many as you want."

"What sort of thing do factory children like?" interrupted Bertha Paul.

"Just what other children like, I should say." Her brother, a little younger, was rather apt to show that he thought her questions lacking in sense,—a too frequent habit with brothers; but for once Bertha was able to reply, triumphantly.

"Don't you think it would be wiser to give them useful things, Miss Winter? Stockings and pinafores, perhaps?"

Everybody looked anxiously at Miss Winter, who thought for a moment.

"No," she said slowly. "At Christmas time, it would be nice to give something extra, don't you think? To put a little beauty into their lives?"

Then everybody talked at once eagerly.

"I'll manage a pair of skates," cried Fred Jackson, whose father kept a hardware store. "Dad will give them to me if I run some messages for him."

"I've a box of paints I've never touched," added Joe Brown.

In fact, it looked as though that tree would be well supplied. Only one of the scholars had not promised anything, and had not even spoken. This was Robbie Grant, a little boy who limped rather painfully, and who was very shabby. He should, indeed, have gone to the Sunday-school on the hill, the little Mission Sunday-school for the factory children, seeing that his father worked in the factory. But his home lay at the foot of the hill, and the minister thought it better for Robbie to come down on his tricycle to the school that was more easily reached.

Robbie could think of nothing that he might offer as a gift for the factory Christmas-tree! He knew that it was not always easy for his mother to save out of the many demands for money even his little offering for the missions each Sunday. He did not like to ask her for something else. Yet he did wish he could give his mite to the many beautiful things that would be brought in the day before Christmas.

That night as he sat by the stove, while his father and mother talked about the chances of turkeys being given away to the people, as they had been last year, he turned over in his mind all his very few and very small possessions. Nothing seemed available!

Christmas day came, and he went to church with his father and mother, this time to the Mission on the hill. Far back in the vestry he could see the tree! It was bare of ornament, but it was a nice tree. What could he hang on it?

The next day his mother made him very clean and tidy for the Sunday-school Christmas-tree.

"I daresay you'll get something very nice," she said, as she kissed him good-bye. Robbie smiled, but the smile faded very quickly. It was giving, not getting, that would make him happy.

Then the thought came to him like a flash of light! He would give whatever present he might receive!

When he reached the school-house, the tree—a much bigger one than he had seen in the vestry of the Mission on the hill—was a wonderful sight to behold. On the top was a star of gold, and all around the star, only a little below, were dolls that looked like fairies. Other gifts were scattered here and there, thimbles in silk bags, little needle-books and pincushions, pen-wipers, and baskets filled with spools of threads. There were small writing-cases, too, besides skates, and a sled, for one boy,—but that was really a prize,—and books in large numbers.

After buns and oranges had been given out and enjoyed, and before the ice-cream, the gifts were distributed. Robbie received a book that he had wanted very much about the Far North and the wonderful adventures of explorers.

While he was eating ice-cream and cake he looked at it, and felt that he could not give it up. After all, why should he? Would it not look rather ungrateful to the kind teacher and superintendent who had chosen it for him?

He took it home and read it as long as his mother would keep the lamp going for him. He placed it under his pillow, to feel the edges when he woke. He cared for the book too much to give it up.

So, as he had nothing to offer, he did not join the other boys and girls in the Sunday-school house. Instead he sat at home and read his book

"Don't you go to the Mission Tree, son?" asked his father, at supper.

"No, father," Robbie flushed a little. His class was going, to help hand oranges and pull down things for the tree. He began to picture the merry party climbing the hill, and to wish—oh, how he wished!—that he, too, had a gift, and could join them.

The evening wore on to eight o'clock, the time for the tree.

"I want to see that sight,—the little ones getting their toys," said his father. "Come, Robbie, we can't leave you alone. Put your coat on and I'll help you up the hill."

Robbie went a little unwillingly, but he saw no way out. He left his precious book at home.

The tree was lighted when they entered. It looked rather a bare little tree compared with yesterday's, and Robbie was sorry. Somehow, the class did not seem to have acted up to its first intention in the matter. Fred Jackson's skates were the two most conspicuous articles, though the bags of candy—many-colored candies in bags of brightly hued net—cheered things up a little.

The factory children were not particular. They chattered over their poor little gifts—some not at all new!—with eager gratitude.

"Too bad some one didn't donate a few books." Robbie heard the superintendent say. I thought some one would have seen to that."

Then Robbie, who had been returning to his first desire to give, could bear it no longer. One big boy, the only discontented recipient, was looking disconsolately at his share, a top of many colors. That decided Robbie.

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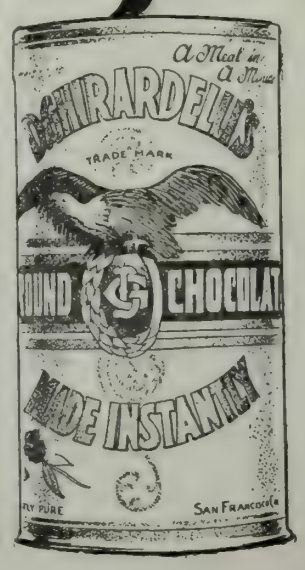

The European war will not increase our price during 1914.

GHIRARDELLI'S GROUND CHOCOLATE

He slipped out of the house, and went down the hill. It was not easy, but he reached his home at last. He knew where the key was hidden under the mat, and he went in. There lay the book! He wrapped it in paper, and started up the hill.

This was more difficult. His crutch slipped more than once, and he even fell himself. He wished that he had taken his book with him!

At last the trip was over. Alas! He was too late! The school-house was closed, the people were coming down the hill, laughing and talking, all except the big boy with the top, who was very quiet!

Robbie went up to him.

"I didn't get my gift here in time, Joe," he said. "This book,—it's for you!"

Joe caught it eagerly. Boys who have liberal uncles and aunts, as well as fathers and mothers, to supply their needs and even their fancies, cannot imagine how precious a book can be to one who has to give all he earns to the family fund; who must think of rent and the grocers' bills, not of what he wants!

"Say, it's fine!" cried Joe, standing under a light to look at it. "There's a picture of Peary—and Captain Scott!"

He did not say thank you, for he hardly connected Robbie with the gift! It was his share of the tree!

Afterwards, Robbie knew that good came out of his delay. Two gentlemen had decided to start a lending library of good books for the factory lads. He was glad tonight, however, for he found as much pleasure in picturing Joe's delight over the book as he had in reading it.

None of his class knew it, but Robbie had learned that it is truly more blessed to give than to receive!

BEAUTIFY CALIFORNIA FOR 1915.

Just one week away is 1915—the year of two great expositions for California and a consequent influx of visitors and possible settlers. Most people from the East have a wrong idea of the State in so far as climate and beauty are concerned, and only a visit here can set them right. If the visit is made during the winter and spring, California will doubtless measure up to the ideals held of the State—if the trip is made during our dry season, the chances are for disappointment. Part of the dry, dusty and glaring appearance of the country during the summer and fall may be overcome by man, but part can not be helped.

At this time certain communities of the State are at work, as a business proposition, in the cleaning up of debris and setting out of trees and shrubs, flowers and grass along the highways, that visitors may see them at their best. Such communities are to be commended and doubtless will be well repaid for their efforts. However, not by community action alone can a section be made beautiful—community action must be backed by individual work and now is the time to get this individual work under way.

Every homesite in the State should be made tidy and seeds planted during the rainy months. If you feel that you cannot afford to buy ornamental trees and shrubs to set out, there are ways that you can improve it with little or no cost.

Young eucalyptus trees cost but a few cents and require very little time to get started; ask your neighbor for some branches off the geranium bushes and set out a few stalks around your house or along the drive. It is astonishing what they will do with a little care in a few months. A few slips from rose bushes will, in a short time, help relieve the barrenness around the house. A few poppy seeds planted now will make a glory spot in a very few weeks.

Every farmer owes it to himself, his family and his neighbors, to help make his community attractive. Add value to your farm and your life by helping beautify your surroundings. If you can afford it, send to the seed houses and get some of their offerings.

SPIRITUAL LIFE.

When God does his best work he needs the best men to help him.—George Eliot.

Learn as if you were to live forever; live as if you were to die tomorrow.—Ansalus de Insulis.

The most difficult thing in life is to keep the heights which the soul has reached.—Rev. David Riddle, Jr.

When death, the great reconciler, has come, it is never our tenderness that we repent of, but our severity.—George Eliot.

The whip of words—short, sharp, incisive words,—chosen with care and knotted well together, is a terrible weapon. One brief, indignant couplet of such words, or a prophetic warning of three small syllables only, like "vae victis," will go round the globe, and man has no power to stop it.—James Freeman Clarke.

Fear, then, to do evil. That is the attitude of mind and heart we should all have. Be brave to face danger, difficulty; but shrink from sin with fear. There is reason for this, believe me,—reason written in the very foundation of the universe, and permeating through all the fabric of conscious life. Determine that your life shall be genuine. Seek character above reputation.—Charles E. Perkins.

Our Father, may we remember those who, in trying times and under difficult circumstances, have given themselves to the life of human service. May we rejoice in their memory and in their work, and may we learn to take our work, whatsoever it may be, however small it may be in itself, as a part of the great human effort through which righteousness comes. May we, in our generation enter the gates of righteousness and rejoice, knowing that for every one of us there is a work and a challenge for our every power, as we give ourselves to Thy service. Amen.—Christian Register.

THE CENTI-PIG.

A young wife recently went into a provision shop and addressed the shopman thus:

"I bought three or four hams here a month or so ago, and they were fine. Have you any more of them?"

"Yes, ma'am," replied the man. "There are ten of those hams hanging up there now."

"Well, if you are sure they're off the same pig, I'll take three of them," replied the young wife meekly.—Exchange.

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The Markets.

Unless otherwise noted prices are f. o. b. San Francisco.

San Francisco, Dec. 23, 1914.

WHEAT.

Nothern growers are holding firmly, and with continued buying for export, the Oregon market has reached new high levels within the last few days. The local market has responded with a sharp advance on all varieties, though trading here is on a moderate scale.

Cal. Club, Ctl.	$2.05@2.10
Forty-fold	2.10@2.15
Northern Club	2.05@2.10
Northern Blue'm	2.20@2.30
Northern Red	2.10@2.25

BARLEY.

Trading in futures has been quite active, and the spot grain is also in strong demand, with offerings coming out slowly. Prices accordingly show considerable advance for both shipping and feed barley.

Brewing & Shipp'g	$1.30 @1.35
Choice feed, per ctl.	1.22½@1.27½

OATS

The northern market is quite strong, with reports of an export demand. This market, however, has not been affected, as there is not much demand for seed now, and red oats for feed are plentiful.

Red feed	1.45@1.50
Seed	1.65@1.90
Gray	Nominal
White	1.55@1.60
Black Seed	1.75@2.25

CORN.

The corn market is slow and without much feature, eastern stock being rather easy, while local Egyptian is offered in liberal quantities.

California Yellow	Nominal
Eastern Yellow	$1.70@1.75
Egyptian White	1.55@1.65
Milo Maize	1.65@1.70

BEANS.

There is little worthy of comment in the bean market at present, as prices stand steadily at the former level, and business is in the quiet condition usual around the holidays. There are indications, however, of a renewed demand early in the year, and while there is considerable stock of some varieties on hand, holders are maintaining a firm attitude. This is particularly true of limas, eastern prices for which are still tending upward, while growers who now hold most of the available stock are very firm in their views.

(On Wharf.)

Bayos: Cal. per ctl.	$4.50@4.75
Blackeyes	3.75@3.85
Cranberry beans	3.75@4.00
Horse Beans	3.50@3.75
Small Whites	3.90@4.00
Large White	3.75@3.90
Pink	3.00@3.10
Limas	5.15@5.25
Red Kidneys	5.00@5.10
Mexican Red	4.75@5.00

SEEDS.

Prices stand as before. Alfalfa finds hardly as much demand at the moment as for some time past, but renewed activity is expected. Other lines are quiet.

Alfalfa	15 @16 c
Brown Mustard, per lb.	Nominal
Canary	10 @12½c
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	7½@ 8 c

HAY.

Arrivals are increasing a little, but not enough to affect the situation appreciably. The local market was extremely dull during the wet weather, and shows very little revival since. It is difficult to maintain prices at the level quoted, and concessions are frequently made on the medium and poorer grades, of which the bulk of the offerings consist. Choice hay is scarce, but in little demand, and alfalfa moves slowly.

Alfalfa Meal, per ton.	14.00@15.00
No. 1 Wheat	$9.00@10.50
do No. 2	6.00@ 8.50
Barley	5.00@ 8.50
Tame Oats	6.00@12.00
Wild Oats	6.00@ 8.00
Alfalfa	6.00@ 9.00
Stock Hay	4.50@ 5.00
Straw, per bale	40@ 45c

FEEDSTUFFS.

Rolled barley has been marked up again, owing to the advance on the whole grain. Bran also is a little higher. Other lines are steady, and general business is rather quiet.

Alfalfa-molasses meal, per ton	$19.00@20.00
Bran, per ton	28.00@29.00
Oilcake Meal	37.00@38.00
Cocoanut Cake or Meal	25.00@25.50
Cracked Corn	39.00@40.00
Middlings	33.00@34.00
Rolled Barley	27.00@28.00
Rolled Oats	32.00@33.00
Shorts	29.00@30.00

VEGETABLES.

Garden truck in general has been rather quiet. Celery is one of the leading features in holiday trade, and while offerings are liberal, choice lots from the Delta bring a little better figures. Lettuce also is moving fairly well, but large arrivals from the south have brought prices down. Local tomatoes are getting pretty well cleaned up, while southern stock sells in a limited way at 50 to 85c. per crate. Rhubarb is appearing in fair quantities, and sells at easy prices. String beans of attractive quality are scarce and high, while wax and lima beans are easier.

Peppers, Bell, lb.	3 @ 4 c
Chili, lb.	2 @ 3 c
Carrots, per sack	30 @ 40 c
Tomatoes, crate	50 @ 85 c
Beans, Wax, per lb.	6 @ 8 c
String	8 @ 12½c
Lima	5 @ 7 c
Cucumbers, lugs	1.25 @ 1.50
	3½@ 6 c
Cream Squash, box	25 @ 35 c
Celery, doz.	10 @ 20 c
do crate	1.00 @ 1.50
Sprouts, lb.	3 @ 5 c
Lettuce, crate, So.	50 @ 75 c
Rhubarb, box	75 @ 1.25

POTATOES AND ONIONS.

The local market shows only minor changes in values, though a stronger feeling in both potatoes and onions is reported in the river district, where the rain has retarded digging of potatoes, and holders of onions are taking a firmer attitude. Local garlic is a little firmer, and sweet potatoes from storage are held at an advance.

Potatoes: Salinas, ctl	$1.40@ 1.60
River Burbanks, ctl.	90c@ 1.10
Sweet Potatoes, ctl.	1.70@ 1.85
Onions: Yellow, sack	90c@ 1.10
Garlic, per lb.	12@ 15c

POULTRY.

Chickens show little change, the attention of the trade being centered on turkeys. These have been arriving in large quantities, including heavy shipments from Oregon and Texas. While there has been a lively demand, bringing the price to 28c. early in the week, this figure could not be maintained, and 26c. is now about the top. Live turkeys receive little attention.

Live Turkeys, lb.	19 @21 c
do, dressed,	24 @26 c
Large Broilers	20 @22 c
Small broilers, per lb.	25 @28 c
Fryers	19 @20 c
Hens, extra, per lb.	17 @18 c
Hens, extra, per lb.	17 @18 c
Small Hens, per lb.	15 @16 c
Young Roosters, per lb.	17 @18 c
Squabs, per doz.	2.00@3.00
Geese, per pair	2.50@3.00
Ducks, doz	$5.00@9.00

BUTTER.

After a little drop, the lower grades have stood without change. Extras also stood at the last quotation most of the week, but now show a slight advance. Considerable northern stock is coming in.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	29	29	29	29	29	30
Prime	27½	27½	27½	27½	27½	27½
Prime	26	26	26	26	26	26

EGGS.

The egg market has been skyrocketing most of the week, reaching a top price of 57½c. for extras. This is attributed to a sudden shortage on the local market, though the southern market was very slow to respond and reached nothing like the local prices. The high figures have greatly curtailed the demand, at the same time attracting shipments from the south, and extras now show a sudden drop of 10c. Storage stock has been strong, but with large offerings of eastern and nearby arrivals of Chinese stock the situation is expected to become easier very soon.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	53½	53½	54	57½	56	46
Sel. Pul.	47½	46	46½	47½	42	36

CHEESE.

Y. A.'s stand unchanged at the recent decline, and flats have dropped 1c., while Monterey cheese remains rather scarce and high.

Fancy California Flats, per lb.	12½c
New Young America, fancy	14 c
Monterey Cheese	17@18 c

Los Angeles dairy prices.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	30	30	30	30	30	30
Eggs	38	40	38	40	48	45
Cal. Cheese	14	14	14	14	14	14
Flats	14½	14½	14½	14½	14½	14½

DECIDUOUS FRUITS

Cranberries have been in strong demand, and with moderate offerings the price has been marked up sharply. Persimmons are a little easier. Casaba melons are cleaning up on the Christmas market at 75c. per crate or dozen. Aside from this there is practically nothing offered but apples, some varieties of which have been marked up a little. There seems to be an effort on the part of the growers or packers to get a little better values, and this seems to be justified by the extent of the Christmas trade, though it is doubted whether there will be much movement after the holidays.

Cranberries	$12.00@13.00
Apples, Newtown Pippin	65@ 1.00
Belleflowers	65@ 85c
Baldwin	65@ 85c
Xmas Apples	1.75@ 2.25
Persimmons, box	40@ 75c

DRIED FRUITS.

The dried fruit market is practically featureless this week, as there is no great demand at this season, and prices are unchanged. Apples are held more firmly than for some time past, with indications of a better demand, though prices are still very low. Holders in other lines take a fairly firm view of the situation, as there is no heavy supply of anything but peaches, and a renewed demand in this line is expected after the first of the year. The New York Journal of Commerce says:

Consuming demand for California products is seasonably light, but with stocks at present small, although steamers on the way from the Coast via the Panama Canal are understood to be bringing full cargoes covering all varieties, the feeling among holders of spot goods is firm and in all lines prices are held steadily up to previous quotations.

There is a pronounced scarcity of loose muscatel and seedless varieties of California Raisins here and advices from the Coast are to the effect that there is not much more of these to come forward, as the cutting off of supplies of Sultanas from Turkey has compelled foreign markets to look to California. Australia as well as England and other European markets is said to have been an unusually large buyer of these California varieties, notably of Coast bleached Sultanas. In seeded raisins the movement here appears to be slow, but the market seems to have been put into good shape by the clearing up of old stock which a while ago was rather excessive. The Coast market on seeded shows no signs of weakening, as prices are guaranteed for some time to come by the Associated Company and outside holdings seem to have been pretty well absorbed.

Buyers are reluctant to meet the views of holders, but the latter decline to make concessions, as evidenced by the rejection of orders for Prunes that have been put up from here during the past few days for carload lots at ¼c. under the general asking prices for 40s to 90s on a four-size bulk basis.

In Apricots and Peaches little business seems to be doing on the spot and no orders are being sent to California from this quarter at present, so far as can be learned. However, the feeling among holders is firm and no price changes are to be recorded.

Evap. Apples, 1914	4@5 c
Apricots, 1914	6 @9c
Figs: White, 1914	4 c
Black	2½@2¾c
Calimyrna	5 c
Prunes, 4-size basis, '14.	5 @6 c

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Peaches, new .....3¼ @ 3¾ c
Pears .....6 @ 8 c
Raisins (in sweatbox):
Loose Muscatels c.... 4 @ 4½
Seedless Sultanas .... 5 c

CITRUS FRUITS

Advices from Southern California affirm that the recent rains have proved a blessing to the citrus industry in many ways; the most noticeable being the holding back of shipments, thus giving the Eastern markets a chance to clean up after the holidays, when market conditions invariably show weakness. Eastern reports tell of the arrival of some very "pale" California navels, which averaged only from $1.20 to $1.40 per box. This would seem to indicate that the fruit has got to be right if fair prices are to be realized. Some growers and shippers are said to concern themselves only about how to "get by" the federal inspector, but the Covina Argus in discussing this, tersely remarks:

"It is not the United States government that the orange growers of California must satisfy in the question of green versus ripe fruit. It is the person who eats the orange."

Thirty-four cars of navels auctioned in New York last Monday averaged $1.75 to $2.50, similar prices ruling in other Eastern marts.

In San Francisco, citrus goods have been moving rather slowly on the local market this week, and with arrivals keeping about up to the former volume, the market shows little strength. Some shading of prices is noted in practically all lines.

Oranges: Navel, box ...$1.25 @ 2.00
Tangerines, small box ..1.50 @ 2.25
Grapefruit, seedless, box. 1.25 @ 2.00
Lemons, box .....1.50 @ 3.00
Lemonettes, box .....1.25 @ 1.75

NUTS.

The soft-shell varieties of almonds have been in a little better demand, with indications that offerings from the country are closely cleaned up, while local buyers show a disposition to take all they can get at 16 to 17c.

It is believed that supplies will run short within the next few months, and better values are also expected for hard-shell varieties, which now will hardly bring over 8c. Walnuts have been easy, but more interest is shown in the better grades. Oriental competition, however, tends to hold the market down.

Almonds, 1915 crop:
Nonpareils ..... 21 c
IXL ..... 20 c
Ne Plus Ultra ..... 19 c
Drakes ..... 16 c
Texas, Prolific ..... 16 c
Walnuts, new crop:
Jumbo, lb ..... 19 c
No. 1 Softshell ..... 16½ c
Budded ..... 18 c
No. 2 ..... 12 c

HONEY.

Some inquiries have lately appeared for choice water white extracted, which brings an advance of about 1c. Everything else, however, is in large supply, with scarcely any demand, and Nevada is taking care of market needs in comb honey.

Water White, extracted 7 @ 8 c
Light Amber ..... 8 @ 9 c
Water White, extracted 6½ @ 7 c
Light Amber ..... 5 @ 5½ c
Dark .....3½ c

HOPS.

With export business developing, there has been quite an active buying movement for the last week, and sales have been made at a substantial advance over the recent quotations. It is believed that there is now only a little left unsold in the State.

1914 Crop .....8 @ 13 c

LIVE STOCK.

Beef cattle are about steady as before. Offerings of calves are larger, but are well absorbed in the local trade, while sheep and lambs are scarce, with a lively demand. Hogs are still plentiful.

Steers: No. 1..... 7 @ 7¼ c
No. 2..... 6¾ @ 7 c
Cows and Heifers: No. 1 6 @ 6½ c
No. 2..... 5½ @ 5¾ c
Bulls and Stags.....3 @ 5 c
Calves: Light ..... 9 @ 9½ c
Medium ..... 8½ @ 9 c
Heavy ..... 7 @ 8 c

Hogs: Grain-fed:
200 to 300 lbs..... 7 @ 7¼ c
100 to 225 lbs.....7½ @ 7¾ c
Prime Wethers ..... 6¼ @ 6½ c
Ewes .....5¼ @ 5¾ c
Milk Lambs ..... 7 @ 7½ c

DRESSED MEATS.

Steers .....10¾ lb @ 11½ c
Heifers .....10½ @ 11 c
Veal, large .....13½ @ 14 c
Small .....15 @ 15½ c
Mutton. Wethers .....11½ @ 12½ c
Ewes .....11 @ 11½ c
Suckling Lambs ....13½ lb 14 c
Dressed Hogs .....12½ @ 13½ c

HORSES.

Quite a lot of fairly attractive horses have appeared in the local market in the last week, and while the stock does not move off very rapidly, bidding is more spirited than it has been for some time, and it is hoped that the market will develop a stronger tone. Current offerings consist almost entirely of delivery and light wagon stock, with a few chunks, but practically nothing of the heavy drafter class.

Heavy drafters, 1700 lbs. and over .....$225 @ 275
Light Dra's, 1500 to 1650 200 @ 215
Chunks, 1350 to 1500.. 180 @ 200
Wagon Horses, 1250 to 1350 ..... 125 @ 175
Green Mountain Range. ..60 @ 1.00

Publisher's Department

One of the best printed nursery catalogues received at this desk so far this season is from the Armstrong Nurseries of Ontario. From this nursery come not only citrus and olive trees but all varieties of deciduous fruit, as well as ornamental and shade trees, vines, shrubs and flowers. Mr. Armstrong has built up a great business since the establishment of his nurseries, 26 years ago, so that now they cover 300 acres. Send for his catalogue, which carries the prices on the stock.

In this issue we devote several pages to floricultural topics, of which our columns have been somewhat shy of late. We hope to furnish more along these lines in the future, because we thorougly believe that every one who lives in California enjoys the climate and flowers of the State. Because you do enjoy beauty as expressed in growing things is the reason why you should do your part in growing more flowers. The Rural Press wishes to help you in that effort.

Along the line of the foregoing we are now printing a new book, "California Flowers, Trees, Shrubs and Vines," by Prof. E. J. Wickson. The work has been somewhat delayed owing to a pressure of other work on the author. However, we expect to have the book ready early in January. The price of the book, cloth-bound, well illustrated, will be $1.50 per copy, postpaid.

Our subscription list is still growing. Last week we added 201 new paid subscribers to our list. During the year, now nearly closed, we have added more new readers to our list than during any year since the establishment of this journal. 1914 has been good to us in other ways also.

A "Happy and Prosperous New Year" to every one of the readers of the Pacific Rural Press.

PRUDENCE OR IMPRUDENCE?

"Jones seems to be proud of the fact that he has something laid by for a rainy day."

"Yes, I know; it's my umbrella."

A former one-cow dairyman was notified by the Board of Health that his license had expired. He sat down and answered:

"Dear Sir—The cow beat you to it; she expired first."

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OF THE
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